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FERRANTI

NEWS IN BRIEF Scharansky seriously ill

COMPUTER scientist Annioly Scharansky, jailed lust year by the Sovict authoritles because of his involvement with the group monitoring the Helsinki human rights agreement, is reported to be seriously ill. His mother, who be seriously ill. His mother, who travelled to a prison 500 mlles from Moscow to see him for the first time in a year, said he was suffering from an illness that was affecting his eyesight.

At the time of his trial Computer Weekly readers joined with Professor Donald Michie of Edinburgh to send an appeal to the Soviet leaders asking for observers to be present. The

EUGENE WHITE . . .

serious threat to UK producers

of Prestel receivers when a six-

month moratorium on non-UK

equipment ends next month and

the system goes public.
One UK-based company, ITT

Consumer Products, is In a

strong position, having already

received substantial pre-launch

orders and, necording to a com-

duction of Prestol receivers in

the autumn of next year."

MONTHLY RENTAL

£840

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£11100 £1725

€100.00

pany spokesmon, is "well placed

the move into volume pro-

However, the entry Into the

Preatel receiver market by non-

UK firms like Sony, Mitsubishi, and National Panasonic la ex-

pecied to he demonstrating 14 inch and 18 inch Prestel

receivers at the Professional

observers to be present. The request was not granted.

Meanwhile in Moscow, ot the congress of the International Political Science Association there have been protests that Professor Alexander Lerner, a cybernetics specialist, has been barred from attending. He has been seeking permission to emigrate for six years.

Motorola move

MARC LASSOUS has left his job as monaging director of Motorola Semiconductors UK, tu join the new US-French semiconductor venture, Matra-Harria. His replacement at Motorola's Scotland headquarters is Wolf Loescher, from the commany's pected to be swift. Sony is ex-Austin, Texas facility.

Store order

MARKS and Spetter has become the latest UK customer for don, on November 7 and 8. Telecomputing's transaction .
processing monitor TPS.

Hoping to stimulate public interest in Prestel, the Post

TERMINALS

Resolutive and VT 52 Emplation

Midlection high speed paper tape.

Trad2 (GDC cps Bi-Directional)

with LA IPH interface.

i 6 jái Decwint a N

digitat

reader punch

MO2 MO cos 8 «On ectronal oquite».

Gene Amdahl to retire

giving up his post as chairman of the board written to all the company's employees on September 1 and plans to retire from the about the merger talks, explaining that they company early in 1981. He said that his are "exploratory" and that it could be decision was entirely independent of the several months before any conclusion. He merger discussions between Aniduhl and Memorex (CW, August 9).

Amdalıl, who is 57, snid that the move would allow him to continue to contribute to the technical and strategic activities of the company while permitting him to spend more time on his personal affairs.

After September 1 he will be chalrman eneritus of Anidahl Corp and also chairman of a newly formed Technical Excellence Committee. Taking over the chairman's role is the present deputy chairman, Eugene

Meanwhile, Meinorex chalrman Robert

£500,000 advertising campaign

that was to be launched in Sep-

tember on TV and in national

until March 1980 as BREMA, the

set manufacturers' trade

association, reported that its

members could not meet the ex-

pected demand. It will be at least

another six months before pro-

duction levels are high enough,

not foreign competitors were u

clear threat to UK manufac-

turera because of the delay, a

spokesman for BREMA said that

than the type of competition

scen in the standard television

Also certain that the UK

would not lose the leed in view-

data technology, o Post Office

spokesmnn sald: "There still is a

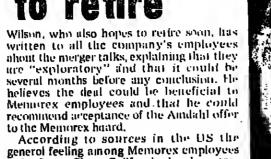
great deal of interest in Prestel

would be no more significant

On the question of whether or

This has now been postponed

newspapers,



it its Santa Clara, California, headquarters

In the UK, the managing director of

Amdahl Ltd, Peter Williams, was not pre-

pared to comment on ony staff rationalisa-

is involvable towards the deal.

the advertising campaign, the

Post Office is to go ahead with

the public launch of Prestel by

installing three new computer

One, a master editing system

for Information providers, will

he installed at the Clerkenwell

exchange. The remaining two user systems will go to the Wood

By Oeccniber, the plan is to

extend the service outside Lon-

don with retrieval systems at

Birningham, Edinburgh, Manchester and Croydon, ful-

lowed later by Nottingham.

Glasgow, Liverpuol, Littnin,

Rending, Sevenonks and

Brighton. At that time, about

50% of the UK telephone

that this figure will increase to

80% and the number of user

access ports will stund at 70,000

It will not be until mid-198tt

population will be entered for.

Green and Fleet exchanges,

systems in London in Sept-

tion that might be required here if the deal went through. This is a sensitive subject in GENE AMDAHL . . . view of the upheavals that took place when to be chairman

Switch to a master distributor

ANOTHER US microcomputer manufacturer has changed from a fragmented UK diatribution ork to a magter distributes

ship.
This time it is Alpha Micro Systems of Irvine, Celifornie end the new mester distributor, Alpha MicroSystems (UK). tokes over for all Eurape, in cluding the UK.

Alpha in the UK is the

broinchild of Leslie Button nenoging director of David Hicks Internetional Manage ment. Registered in Neveniber 1977, it was originally named Crown Shield, and lind no proviaue track record in Ilia con puter businees, it was furner by Button se a merketing ven-

ture looking for a product.

Eventuelly the choice felt on
Alpha Micro, vary much a top
and microcomputer, with
typical configurations costing
nbout £20,000.

In Juno, Crown Shlaki signed on excludive distributor agreent with Alpha MicroSvarain In the US, and changed its mino to that of its American supplier it subsequently pained the European distributorship. Currently there ere some 30 distributore in Europe.

ALTHOUGH many US cuttomers have been given delivery dutes for the 4300 series Memorex merged with Telex early last year. america. machines they have ordered and some have discovered they will have to walt over two years or more, that is not the whole Two leasing companies

Greyhound and DPF, have been quoted in the Wall Street Journal that they ordered scores of machines but have been given delivery dates on only about sh of them.

Declining to comment on the

eases of Greyhound and DPF. IBM sald that delfvery dates were assigned through a randomisation procedure that was fuir and equitable to all customers.

Waiting

game on

"Some orders were for several machines, and some of these customers have not yet received dates for all the systems the times have non yet been forme published," the campany add "Il should he understoodes

any figures quoted could misleading sluce some co nuchines as soon as scheduled statements, which are in the context of the US market on appear to be that part of the & and equitable" process is tora only a handfol of machineria: the ballut for customers read multiple orders, and that she ilates are allocated lo.fl remainder of such orders, the will be later than the last a cated date.



maily for the contract.

configuration and application apecified and the atrength of the particular parent company the area concerned.

They are, for the Post Office. John Whyte ond Roy Harris; for GEC. Mel Price and Dr Nigel Hurne; for Plessey, Maurice Following promotion and in- Glynn and Frunk Delaney; and Itial contact with potential cua- for STC, Kenneth Frost und Nearly 20 sitas for System X

with its three partners.

These are for five local ex-



Allantic House, see Lion Coup. Lieidon, EC4 Tel: 01-083 9481; Teles: 286344



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suit settled

THE law sult between the US

company Mostek, and the Mational Enterprise Board's

innos has been settled out of

tourt. Mostek's action was simed at preventing former

employees, led by Inmos direc-tot Paul Schroeder, using its

rade secrets with the NEB sult-

An agreed settlement, which

prevents Mostek from bringing further scilon, has effectively

ended the sult in favour of

is compatible add-on memory

systems supplied by F.M&M in

Europe are now to he

mainished by Memorex under

an agreement between the two

firms under which Memorex has

also bought the European tense

bise of EM&M memories.

MOUSTRY sources say that In-

tel and Texas Instruments are

having such difficulty in park-

aging 32K hybrid RAMS in the

Pegyback manner that HISM

equires - two lift object

munted aton une another on a

whate - that IBM is to pay

at the \$1 to \$2 per mart over

Megike of about \$5 It or light ally

wed to pay far the 18 million

A SUBSTANTIAL vote of con-

dence in Wang's recently nu-

sounced VS/WP Integrated by

ormation System (CW, June 7)

Department, which has occurred

Reachers, costing \$9 million.

to be lastalled in embussies

¹⁶-bit mini launch

ANEW UK manufactured 16-bit

ninkomputer has been intro-

Systems of Midsomer Norton,

near Bath. Colled the 182000 it

factorial form of the set along the set

along with a microcouled in-

striction set. OEM prices start at 22,200 for a basic machine

THE role of the government's

Tank Tank, the Central Policy Review Staff, as co-ordinator of

itsearch and investigation into a

Wide range of aspects of

mercelectronics, hos been

respect Each government de-partment involved in such work

will continue its efforts, with coordination carried out on the Whitehall "grapevine".

Best beam and X-ray litho-

and of a Robotron: equivalent in the Branch of a Robotron: equivalent in the Branch of the BM 4300 range. Full story

Na de News, page 11.

E German thrust

With K words of memory.

duced by Interset Computer

found the world.

has been made by the US State

19m Wang order

riggyback snags

Memories deal

MUNICEPSILL CE JOEDAN

Number 667

Thursday, August 23, 1979

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CAP director drowns in Fastnet disaster Mostek/Inmos

AMDNG those tost in the oterm that enguifed the Feetnet Rock race last week was David Shea-han, financial director of CAP-CPP and a foundar of the original CAP company in 1882.

The Gremetken, which he owned and okippored, was turned over by the sees. It is understood he had to unhook his safety line to surface and was swopt away.

Hio con Matthew, and other crew members, were later picked

but one of them, Gordd Winks, died before they reached Culdross sirbase. An accountant, Sheehan was

first involved with date proces-sing in 1958 when he was de-olgning systems for various secountency applications. Since the stablishment of CAP he hed guided the company's financial and legal affolis and he clea took an active part in the devalopment



Itel, NatSemi in takeover talks

way between Itel, National Semlconductor and Hitarhi which rould lead to National Semiconductor taking over the troubled IBM-compatible conputer business of Itel, and marketing of large-scale Bitachi mandrames by the US.

Details of the talks have not yet been allschood but will, it successful, lead to an amountcement very shortly.

National Semiconductor has just entered the IBMcompatible husiness in its own right with a muchine called the 8500, which it describes as a 370/158-class machine, Currently being sold in five US chiles, it is to be bunched in Enrope later this year (CW, July

Meanwhile the reconstruction of ttel continues with the sale of three service increat operations to Computer Sciences Corp of El Segando, Californiu.

They are the Batch plus the Data and Online divisions in White Phrins, New York, and the Professional Services division la Los Angeles, CSC Is to pay \$10 million for the three, which togother employ about Sull people.

Filtuchi is also to reduce ita

delivery of jurga muchines to itel. It is understood that Ital will only tuke 30 to 00 this year CPRS drops micros instead of the plannad 90. Itel'a second quarter figures

are as bad as expected, with a

CONTENTS Computerview on gavt duis Focus on contract work Date 100 into office Downtime by Ched Letters to the Editor

datection
Programmer Nates
Puzzler
Software Fila Stating up for a major thrust mail of the state of the st stable beam and X-ray litho-producing VISI components, and seem to be concentrating after this could be used in the could be used in People and Events Micro News Introduction to Pascal Bales and Marketing Bit Reading mechine for the blind

JOB VACANCIES PAGES 16-39

\$168.3 million. The first half loss expanded on the money was \$50.1 million on turnover of \$347.5 million

The losses include substantial pravisions for depreciating the values of computer equipment because of IBM's reduced prices, ambeosts likely to be incurred he closing down operations, laying off stalf and selling assets.

made in one minute using simp-

ler hordware than that presently

avullable, could soon become a

Invented by Drs Joan Mitchall

and Gerald Guertzel, of the

Thungs J. Witson Research

Centre, Yorktown Helghta, New

York, the method usea n "run-

ength coding" technique which ,

allowa the fax machina to use a

aborthand coding to record the

Image to be transmitted. Each unbroken run of black and white

picture elamenta la givan a code word composed of bits which

designate the number of pic-

. The algorithm used in the Mitchell-Goartzel theory operates on the principle that a

run-length la much more likely

to be followed by another run-

length or a vartical reference is

much more likely to be followed

ANNOUNCEMENT of the strip-ped down IBM 3033 to replace

ped down IBM 3033 to replace the 3032 is imminent. The new machine, exclusively revealed in Computer Weekly (July 19) is code-named Nawport and Is-expected to be called the 3033-D power rating is likely to be about 3.2 million instructions per second, compered with five for the 3033 describble IBM has stopped

te 3033 Mennyhlle IBM ties stopped

Further data compression can processing.

Stripped-down 3033 imminent

ture elementa in the run.

by a vertical reference.

worldwide standard.

IBM fax could be

that would theoretically allow can be encoded as either o verti

facsimile transmissions to he cal reference or as a run-length

poitems.

world standard

into disarray, turnlag computers from a cash generator into a - cash oser. The ligures graphically underline lights problems; in the The company says that its Turn to back page

generated by computer opera

tirst half of 1979, the company's

- according to IBM "an inef-ficient use of the code word bit

Instead, "the facsimile

machine automatically detects

this potential redundancy: run

lengths which could be encoded

as vertical references or as ron-

lengths. A vertical reference is

alwaya the ahortor code. Only

when there are no possible ver-

tical referances, is the run

length procedure used; as a con-

asquance, the average code

word is shorter."
The mathod la under con-

sideration as world standard by

the International Consultative

Telephony, as la one other manufacturer a

The closest IBM has to a fac

almile aystam is the IBM 6670

introduced earlier this year

which incorporates a lazar

printer, and communicationa

equipment for word and data

One achool of thought be

llevas that the 3033-D and en

enhanced 3033 will undergo

metamorphosia to become the

first two models of the H-series. The smallest H la expected to

have a mid rating of about 3.2 and the next model up a rating of

i jisah Wisher tulke to Gede Amerik – page 6.

manufacture of the 3032.

about 0.5.

Committee on Talagraphy and

A DATA compression method be achieved by taking note of leveloped by two IBM acientists the fact that certain bit patterns

NEB puts £5m into **US systems firm**

THE activities of the National Enterprise Board in high technology have taken a turn towards immediate practical applications instead of long term strategies, with the setting up of a joint venture with Q1 Corp of New York to moke and sell small office computers. The NEB will invest up to £5 million in the scheme, which is the first mojor venture for the Boord sluce the arrival of Sir Kelth Joseph's new

Ql is a smoll, advanced-technology firm whose products include a highly comport and partiable multifunction microcomputer com-bining twin floppy disc drives, a plasma display, a matrix printer, and a keyboard all in one typewriter-sized unit. It is intended for accounting, word processing, and scientific desk-top work; it has communications incilities and so can be used as a data entry erminal; and has a rauge of software of the type itsed by the IBM

The joint company will be set up in the UK by Q1 staff and will be half-owned by the NEB. It will aim to manufacture Q1's products, market them in Europe, and develop them largeter and develop them largeter are into a the forces. lorther, mainly on the software side. According to Q1, a algnificant amount of this work

planned for the UK venture, This will be quite separate from Nexos, the Board's office systems firm, and will not be part of the grand strategy to develop no integrated systems architecture for offices, but talks have been held with Nexos, structure threw Itel's strategy which is interested and may cooperate in marketing the

QI is already operating in Europe, out of Brussels, having done £750,000 worth of business there last year out of its total biraover of \$1.5 millian. Based in Hauppange, New

York, O1 has links with several other small, high-technology companies all producing advanced products which cauld well be combined into some attractive systems. The firm is already working on bubble memories, and ather urinters which would be more versatile and have fewer moving parts.

Turn to back page

STRIKE action by Post Office - staff, which has disrupted comunter operations and created a telephone hilling backing of almost £1,000 raillion, looks like ending following a return to work by clerical staff this week and an Improved otter to supervisory staff, who include 123

computer personnel. The 6,000 sumervisory staff members of the Society of Civil and Public Servants, were seeking more than the ofter of a 9% increase from April 1 this year, and further increases from July 1, bringing the total offer to between 18 and 24%.

The 36,000 elected members of the Civil and Public Servants Assn. have accepted this offer,

The new offer to supervisory staff is better to the exient that Instend of just same grades getting a 7% payment if the Post Office goes ahead with its plans to restructure job grades, it will now be paid to everyone.

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ritorics. However, it is intended founders, and each has two to use the resources of the parent companies in various countries and these would be working in co-operation with

tomers, BTS would inligate dis- John Smith, cussions. At the pre-tender would be assigned to bid for-

The choice would depend on several factora, including the

BTS has a capital of £100,000 contributed equally by the four representatives on the hourd.

stage, a project would be con- installations have so far been aidered by the BTS board and chosen in the UK and the Post one of the parent companies Office has placed eight orders

changes, two junction systems and one main network system. The first two installations are planned for Woodbridge In Suffolk, and Baynard House, near St Paul's in London.



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Vol. 27 No. 867 Thursday, Aug. 23, 1979

John Kavanagh 01-261 8033 Daputy Editor
Tony Higgins 81-261 8698

Merlin was to be a single, online system. It was intended to take over from several separate Adverbsement Monogor Harry Hutson 01-261 8359 01-261 8503 online and batch systems now Class Ad Manager used by the British Lihrary, but Brian Durrant 01-261 8597 based on retrieval software from the US and running on IBM

Publishing Director **Dr J. A. G. Thomas** Editorial Director Chrla Hipwell PC Electrical Electronia Prose Ltd, Dorsel House, Stantford Stront, London, SE1 SLU. Telephone: 01-261 5000. Yelegrams/Yelox: 26137 6ISPRG &

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Computer Weekly has a circulation aschweek of a vot 80,000 including the highest tally requested circuletos the UK. The International edito which is published 10 limes a year ha

Computer Weekly is seet into all charge to the tollowing sategories in the UK and Erromity Company sategories in the UK and Erromity Company sategories as seematives, this pervants responsible for computing, mesagement/computer consultation, leaves and leaves, SP Mesager/supervisors, systems assigned CAM officers.

CHANGE OF ADDRESS il possible, and ratum a recent wrsppsv in which a capy arrived to: The Manager, Can-trolled Circuistion Depart

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30 et. John's ROAO TUNERIOGE WELLR (0892) 90081

report suggeota a figure eny-where between 20,000 and 30,000

iodata DIGITAL MICROSYSTEMS DSC-2 LOW COST COMPUTER SYSTEM INCORPORATES: ONE MED ARYTE of Hoppy that storage on two engle bides 8" divest — Handald.
 64 BYTES of Main Memory standard - 32K and 48K man available
 1. M. (MSK 05 stordy)d & text PROCESSING BASIC COBOL FORTRAN available. Ex PANDABLE - Add on Hard Disk Byelem - Up to 28 Magabytes per drive MUDA) A ARE LOOKING FOR GEALERS & DISTRIBUTORS

THE Conservatives' pledge to cut public spending hos led to a £599,000 cut in the British Library's budget, so after several troops of development work the years of development work the Merlin cataloguing system has been put on ice ludefinitely ICW, Tory pledge

of money we have already put the sort of system to be admired in. We are trying to reduce public expenditure and you con't do this by backing every company that has a good idea."

It is well known that infoline is running late - it was originally hoped to have it working in February - but it is expected to be live in a couple of weeks, with the entire World Patents Index of 1.5 millon records avellable not only in the UK but elso to overseas subscribers through the internetionel network, Euronet.

In threatening the future of Merlin and Infoline, the government is taking en extremely nerrow view. Merlin was being deelgned to run on ICL 2900 computers. It has been described as "out on its own" by the British Library's director of computer aervices, Kenneth Norman, it could have been just

place on April 19 and 17.

Another new feature of the

show is thet following an

egreement with the PSA It will

be organised by Illffe Promo-

tions, the firm that stegs the Compec exhibition, and will be sponsored by Systems Intern-

Further details are evolishing

from Hiffs Promotions Ltd, Dor-est House, Stomford Street,

on SE1 BLU. Tel: 01-291-

the nibre critical sharinges,

The time when frecluncers

were known as the cowboys uf

the industry, are long past. The

range these freelancers any ride

is the highly legitimate contract.

merket. Not only are DP-

apecialists increesingly hard to find; the average inatellation

would have to revice selery

budgets drastically before

taking on a full-time professio-

Such financial commitmenta

must be gnod news.

end sold overseas, complete with big ICL systems. Specialised systems like Mer-

lin are not available from nay old software house; like the Post Office's viewdata system, but on a smaller scale, Merlin could hove acted as a flugship for UK computer companies looking for oversens expansion.

fnsteud, the British Library has to corry on using iBM-based systems, putting its nowrestricted resources to designing messy softwere petches for the existing systems instead of heving the funds to develop o UK system exectly to its own And what of the effect on

British Library staff? Several yeers' work has been shelved. Another project, involving the conversion to mochine-roadable form of the British Moseum Reading Room catalogue, Is now under way. What confidence cen the staff involved have thet this project, too, will not get the axe when the Librory's budget comes op for review again next

Like Merlin, Infoline means more than jost a system for getting at scientific information. Even before it goes live it has 160 customers, two-thirds of whom are overseas. And once the service gets going subscribors are expected to be ndded at 10 ii

Infoline is not just another

company with a good idea which Civils seems to think it is like Merlin it rould be a money earner for the UK in more ways than one.

looking no further than the next pound note in putting such projects as Merlin and Intoline under threat. As taxpayers we ile not want our money wasted, but these projects are not ontdated industries like ship huilding ond even mobat manufacturing: the government does not seem to grosp that the computer indostry is still young. that its cconomic and service record is improving from year to year, and that it will become the second or third most significant

The government seems to be

And ofter Merlin and infoline. what of Inmos, the micro awareness scheme and the Microprocessor Applications Project? Their future, too, is not assured; the government could stiii stific efforts to not the UK emong the more go-shead countries in the use of microelectronics. As Grylls put "I have never taken the view that high technology is short of

The nxing of Merlin could torn out to be the thin end of the Conservatives' pledge to cut years

COMPUTER WEEKLY

THERE were no surprises where Postmoster General John stonehouse announced less week that the contract for Lace had been ewarded to ICL ... Data from ports in Sout

are constantly writing about them, and plmost as constantly pells it all wrong. This week's example was sent in by Johann Riedel

monta. Computers originally rett on valves, until semeons (pribble)
Inpaness) invented the translator... Nowadays manufacture in
Implant thousands of those translators onto a cingle sither of they
They are packed so class that there is bardly an element the the the Japanese i suppose .

kinds of chips, ROMS . . . and HAMS

ANYONE of a sensitive nature could well be steered away from a carcer in computers frum reading a current copy of Computer Weckly. Crises are commonulace, threats in multiple moile and inzurds an everyday fenture of DP life.

At first glance it oppeors s

disappolatment to the Brillsh

Library, but not a national

tregedy. One might elmost feel

moved to applaud the govern-

ment's bid to cut public spen-ding by oxing, if indirectly

through e cul in the British

Library's budget, e system

reletively small number of osers.

minority-Interest service, the

infoline scientific information

retrieval system, is now also

The threat to infoline's future

hes been expressed by Michael

Grylls, MP, vice-chairmen of the

Conservatives' industry com-

mittee. He said, "Only under

exceptional circumstances

would I improve on the ainount

PERIPHERAL products almad at the OEM market and sophle-

ticeted end users will be on show at Paripherois 80, the next

in the series of annual axhibi

tione started in 1978 by the

Pariphoral Suppliere Associo-

Periphorals 80 will be a blg-

ger show then in the pravious

been moved to the Bloo

two years, the venue having

Peripherals show

facing an uncertain foture.

However, another seemingly

which would have had a

News that a leading media supplier is murketing a floppy disc in "catastrophe" packs, while another is adapting disc drives for use under "hostile conditions, hardly inspires cnnfidence. Add to this list of environmental dangera that of hazardous VDUs, end It would not be surprising that potential DP recruits turn to a less adventurous roles such as North Sea oll exploretion, Middle Eestern communications, or the Foreign

are mitigated in the case of the contract worker. He can be hired 'As if there ere not sufficient end fired at the convenience of problems, DP has lately found. the inatelletion, heving itself in the front line of industhopefully spread hie expertise rial disputes. Fortunately, these ecrosa the teem. Contrect hire problem ereaa eppear to be conelso takea the pressure off the centreted in government end permanent DP team when feced Stete organisations which present little or no positive incon-venience to the public in with unexpected company damands for new applications. general. That the trade figures An additional bonus is that of or phone bills ere deleved may oven be a case for joy rather

Whether the current anortage f computer personnel — one

DP department invally - at -- is influenced by the bad image ienst for the durution of the of computing, is best left to the contract. The freelancer has porescarchers of Helfleld Poly. laterest in getting involved in Mennthne, the news that un in-Inter-company disputes. For creasing number of DP prnhim, un Installution walk-out fessinauls ere turning to freewould be a financial disaster. lancing and sn relicving some of

For DP management, the benefit of inring skilled expertise is that of dependability plas

Conaultancy compunities would no doubt endurso the movement towards the employ-ment of fractances. While in meny cases their own reacurees ore being aeveraly atretched -Langton Information, for instonce, has recently reported unfilled vecancies in saverni areas - the ebility to delegate on behalf of the client a akilled and dependeble team of contract

Not all, though, would be pleased by the growth in contract personnel. For Judith Morris, the compiler of the Paopla end Evants faature in CW, such incressed movements would pley havoc with her workloads. But then the computing industry la e difficult and hezardous enterprise.

MINISTRY OF DEFENCE, Liverpool

A 20 Keystation Processor Controlled Keying System producing ICL 1900 and 2900 compatible magnetic tapes is required for installation in June 1980.

Applications for copies of the Summery of Operational Requirements should be made quoting relerence CEH/44, to:

Central Computer Agency, Riverwalk House (Room 822) 157-161 Millbank, London, SW1P 4RT

Ten ago ...

AUGUST 21, 1969

ton, South Wales and Humber would be trensmitted to the Britteh Transport Oocks Bosn' nowly completed comput contra in London over Ma conidote equipment to an ICL Bystom 4/50. This was the first stago in a system to speed two round of chips . . . Views to future developments is des transmission to and between computers were sought by the GPO'e advisory group on dra transmission . . . Over 2,000 delogates were expected to Datafold 89 at the free Title Hell, Manchester . . . Ossi general and continuing sale increases for qualified and pro-facational ateff, systems are lyste' and programment seleter were not keeping up with the rising cost of living, seld the

COMPUTERS being the latest fashborable talking point, the media

Solibult, who wins £5. A computer is busically a machine to root the truth of verious mit

they work faster, consume lass power and therefore secherpe (1) to wa Can now lieve whole computers on one chip. (graph). You get he

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Data 100 goes into office technology

systems built by Sycor, another

US firm taken over by Northern

Telecom. Sycor terminals have

been sold in the UK by Dete 100

Eames seid that, despite the

changes, he hoped the Data 100

name would be retained for

some time because it was so well

known, It had already proved

valuable in proporting Sycor kit

Sycor equipment is now sold on the Continent by both Data

held a non-exclusive marketing

ogreement for several years

takeover of CMC Europe by

be the second biggest telecom-

munications manufacturer in

North Americo, having chnlked

up a tornover of more than \$1.5

billion last year and net profits

of \$100 million, Turnover in the

first six months of 1979 stood at

According to its latest annual

report, Northern Telecom's

resenrels and development divi-

sion, Bell-Northern Research, is

Redifon (CW, July 19).

more than \$950 million.

hich will not be affected by the

Northern Telecom claims to

100 and CMC, the latter having

December 7, 1978).

in the UK.

systems.

batch terminais for IBM users, is to undergo a metamnrphosis over the next year, turning itself into an office technology sup-

Thio development is a direct loped for the intelligent term tual result of its takeover last year by the big Canadian telcconimunicotions firm, Northern since the end of last year (CW,

According to Barry Eames,

Protocol for-**ICL** users

XBM, the high level network supported by a vorsion of the ats 100 Keybatch data capture smiriel system with two VDUs nd floppy disc storage. The Data 100 product is now

being used on a trial basic by the National Cost Sourd's Compower bureeu at Doncester where it is linked to o 2970. Data 100 piene to offer it soon o ICL users in general.
Another firm moving into the

CL compatible terminal busi noss is Teknos Bystems of Uck-field, Sussex, which is bringing out a 7802 lookoliko, among other products (CW, July 29). ICL demands a compensato

levy from users that install to note from enother supplior but the lavy emounts to only 5% of the rental of the equi volont ICL terminal aquipment The levy for add-on memory is

DATA 100, the firm best known as a manufacturer of remote Ltd, Northern Telecom has a telecommunications products range of office equipment that includes fecsimile kil and PABX are the two main ereas for deve-At the same time word pro-cessing software is heing deve-

vented the term Intelligent Universe, to describe the concept that encompesses a range of information systems including the office of the future. The company's biggest con-

tract to dale in the dets communications area has been sup plying its SL-10 packet switch-ing exchange to Bell Ceneda for the X25 based packet switched network, Datapac. Bell Canada owns 60% of Northern Telecom shares, the rest being held by the Canedian government. Northern Telecom's first two

X25 network contracts in Europe are with the West German PTT for a packet switched network in Berlin and with Societe Générale de Banque la Belgium which is setting op a network with SL-10s at nodes in Brussels, Gheat and Antwerp.

TERMINALS

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LA36 DECwider IV
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LA120 DECwider III

VT52 DECscope

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1510 VDU 1520 VDU

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2621A VDU

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951 Floppy Disc Unil 8421 Dual Cossette 815 Single Cassette

MIDLECTRON M22 Reader/Punch Unit

1820 Hylerin 1841 Hylerin ASCII/19M 2741

HAZELTINE

Northern Telecom has in-

honorary fellowships

ingham of Birkbeck College, London and chairman of the UK Consultative Committee for Computer Education, chalred the original BCS Education Committee and its successors. Dr Leslie Inckson of North Staf-

BCS awards four

Giving this new National Westminster Sank 24-hour service till at Wood Green, North London, its first twirl is television personality. Anthoe Redfern. Fasturing a touch-type electronic Reyboard it enables customers to obtain, cash up to a pre-arranged limit and to order a statement or a cheque book at any time.

National Westminster Bank

HONORARY fellowships have been conferred by the British Computer Society on four members (all currently fellows) for their work for the society in committees, branches, and relations with government. Professor Richard Bock-

sity hes iong been involved in the Humberside branch and the Society's Branches Boerd, Jahn Whitiaker worked at the Centrai Compoter Agency and did much to establish a clase relationship between the CCA and the Society. He hos also been chairmen of the Mentber-

done much work in computer

education, particularly for

Dr VIc Dole of York Univer-

Predicting

predicting fog and bad weather on Britain's motorway network has been produced by Scicon, under a Home Office contract. Beard on o Toxoe instru-mente 990/4 computer with 24K words of mamory, the system will be used to ossess deto

humidity, temperature, wind speed and direction, and rainfall gethered from sensors on the M6 in Derbyshire. Eventually is is hoped to heve the system "live" in the Der-

byshire area, where there is e high incidence of fog. The system uses a fixed for-mat record information retrieval inquege specially developed by Scicon, and the Home Office hopes that it will help motorway police plen their actions.

Degree course

A DEGREE course in electronic end electrical engineering, lasting 41/2 years, has been organised jointly by Bath University ond GEC-Merconl Electronics. It will comprise alternating periods of working at the University und the Marconi company, which sponsors each

HAMILION

For sale or rent.

Plessey warns strikers

PLESSEY has werned thut jobs rent strike action on two fronts

engineers end organised by the white-collar union ASTMS, is the industry as a whole. An offer now more then e month old and of £70 has been rejected.

The second strike has been in the form of a series of one-day oes not end soon. stoppages, every Monday,
The first strike, involving 600 which are part of a bid to win minimum of £80 for engineers in

They have elreody rejected o

Hope of early return at NCR

THERE are hopes this week of a nald, told Computer Weekly formula for a quick return to that the strike came about due work by 800 striking NCR staff to e micconception of the comin Dundee, where production of the company's 8000 system operation of the penalon fund. range and the 1780 autoteller heve been halted (CW, August

Now in its third week, the strike begen over o staff claim for improvements in the compeny's pension scheme including a proposal that seeks to lower the elirement age to 60.

Jundee plent, Richerd MacDo- manner.

be improved," he said.

If the strike does not end soon, it is likely that orders placed with Dundee will be met by other NCR plents, elthough the ASTMS spokeamen hes pointed out that "the ateff of Dundee would black eny equipment Maneging director of the arriving et the plant in this

"We have one of the best pon-

sion funds, but we know it cen

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If you are wondering why these ladies look so ecstatic, it is because they have just taken a rida in a microprocessor-centrolled lift. What can the microprocessor have done to them, I hear you sek. Only whisked them from one fleer to the next in sie seconds instead of seven, by controlling the accaleration and deceleration of the certeribly actentifically. Seffine at US Elevator in Spring Velley, California (where else?) have been besvering away to pere microseconds off the time taken to do the job by boring old releys. I am sure they are thrilled to see such appreciation of their efforts.

Priory commitment

(March I) about the campaign to monument, qualifying it for s save the Lyceum Club in Liver- permanent custodian and pool in order to keep up local government grants. amenities so that microelec- The Priory is a 12th century tronics firms will come to the ruin in the middle of Birkenhead area. Now I am happy to report docks. So, if you get a job with not one but two victories for GEC-Fairchild at nearby Nesthose alming to make Liverpool ton, you will be able to pop over a Home Fit for the Herocs of the in your lunch hour for some

Not only has the Lyceum been lorries, and distant foghorns. I saved, by the personal interven-shouldn't be surprised if you tion of the Environment Secre-were inspired to start writing tary, but airkenhesd Priory has code in rhyming couplets.

restful meditation, accompanied by clanking crunes, rumhling

QL, QI, Q1 or qhat?

NEB watchers among you will But inking uf pronunciahave been puzzled by the tion, Ql is based in a town in stories in the daily papers New York colled Hauppange. about the Bonrd's lates; and how do you suppose you hands-neross-the-sea venture, pronounce that? If this were In the Daily Telegraph the US company is called QL, in the Guardian II Is Ql, and in the Guardian II Is Ql, and in the Financial Times it is Q1.

The FT was, true to form, private secret, it's no more difright. I expert the sec the National Graphical Associate compangre Peak, Colorada, tion picketing the company, with placards saying "Unfair to compositors," but I fear they will be hucking the tide, will be hucking the tide, this week's 1984 place (page 2). will be hucking the tide. Ridiculous company names are springing up everywhere, usually unpronuunceable like

going to keep it as my awn ficult to articulate than Un-

Remembering the main in-gredient in advanced lubricents, presume that what the musical acribe meant was a elither of

PEPIPHERAL HABOWARE EMITE

Attention all OEM manufacturers

LETTERS TO THE EDITOR

large group of companies, I quite frequently. Accepting that here are acute stuff shortages in the industry, I atill find It difficult to accept the normal pattern of my business calls, and draw to the attention of the managing directors of OEMs the following criticisms.

1. The telephone number listed for your company in various trade and technical publications is almost gusranteed to be the wrong one.

2. Upon ringing the correct number with a sales query, your switchboard operator will in must cases direct the call to the

wrong person.
3. When ringing with a

usually no technical/sales people in the office at that time. A secretary (often in her own words "only a temp") usually monages to completely miscon strue my Inquiry with a result that the wrong person rcturns

4. Of phone calls made bet-ween 12.00 and 2.30pm, 95% result in the person who deals with my area/problem/ type of company being at lunch.

nssessedl)

was able to help.

Cloak for

extremists

AS the former, and feundor, escretary of the institute of Date Precessing, I was delighted to rood in Computerview (CW, August 2), of its current prograss under the IDPM bencer, and justifiably gratified at your ensolicited testimonial to the "dignilled image" of IDP.

dignilled imoge" of 10P. Unfertunetaly, on the same

pege you had a Fecus article on an IDPM meeting addressed by a representative of the National

Council for Civil Libertice on the subject of privacy, I can think of nothing more

celculeted to underning the dignified Image at a professional hody then to link its activities

with those of m ornaciantion

eppoars on fraquent accordant to be morely a clock for extrame

Crcyden, Surray.

DEREK BRADLEY

where apparently innocusive tit

5. Many of your soles team ure newly recruited and seem to be totally unfomiliar with the products they are selling, far icss with performance vis-à-vls competitors' products. .

. Uninitiated asles calls from young ladies obviously reading from a prepared cue-card are all general query shout one of your very well providing that the

Byte manipulation

WOULD like to correct the impreasion some of your readers may have formed after reading your report in Micro News (CW, August 9) of the views of Software Technique Inc.

You report that STI considers that the 16-bit word size can be a positive disadvantage in processing byte-oriented data. Either "half the memory space can become wasted", or, if bytes are packed two to a word, there is a processing overhead in "the execution of sequential instructions to unpack the bytes".

This is not true. The Texns 9900, Intel 8086, Zilog Z8000 and Motorola 68000 all permit full feature single instruction access of any byte in memory and, in general, enn manipulate byte wide packed data with no over-

head at all. Furthermore, most of the uhove 16-blt microprocessors have sophisticated hyte and byte string manipulation facilities which make the innnipulation of hytes, as in communications line handling or word processing, very much easier and faster than

existing 8-bit interoprocessors. A partlal exception is the 8-bit mleru which is a sawn-nff 16-bit alcylce, merely hoving an 8-bit data highway, of which the first example is the intel 8088.

These muchines will process byte oriented data ulmost us fust ns their 10-bit hrother - but only when data rates to and from the ports do not require DMA (direct memory access).

Then the heavier bua loods uf

instruction fetch in the 8-blt devices will tell against them, as will the fact that the 16-bit dcvices can, if required, use "intelligent" full width DMA func-

The view that 16-bit devices only come into their own in number crinching applications forgets that the data highway is nisu used for the Instruction fetch and port traffic, and intelligent controllers can perform the packing and unpacking of traffic to byte-wide perlpheral interfaces outside the highway.

C. A. MALCOLM

Martin Banks replies: Mr Mulculm has made some valle mints about the new and existing ranges of libbil microprovessors, yet I fear he may be missing an important practi-

umy be missing an important practi-val point.

Certainly, the faculities he talks of are available, but they require an intimate knowledge of the archites-bare of a particular processor to be able to make use of them.

One of the unital reasons for moving to a th-bit processor in a system is to reduce the degree of programming stall realized by ar-

programming stalt regional by ar-tening them closely to tilph-level hagnage pragreenming. This, to han, expands the patental another

It is welt known that high-level languages are inofficient in their philisation of memory resources. campaced to machine cade mugramming, hat the degree of skill

01-941 4806 Wetherby 61885 Dublin 971854

Flexible working and poor DP munager dnesn't actually ask any technical questions in reply. This tends to cause waves of panic followed

by Irritatiun from the caller, (ini AM following Dr Bishop's series, introduction to Pascal, cidentally, I find that some of the computer press tend to employ with interest, but hope that a these people, usually trying to get last week's advertiser in some stage she will point out that her example of a program Magozine X" to advertise this week in their nugazine, even for flexible working hours is no although the response to the ii practical one (Part 5, CW, July initlal advert has not yet been

Employees working flexible In short; MDs, man your need to see their current the offices at all times with comsituntions vis-à-vis the timethe petent personnel. Yours is a ought to have to put in, in order highly competitive field and it to plan their day-by-day atten could have been your company dunce and activities. Their ofthat I telephoned three times lengues and management need an indication of their presence last month with a view to placing an order of over 120,000 or absence, and managemen and could not find a suitably needs a situation report at the qualified person to deal with. That order is now placed with end of each accounting periodio ascertain that each employer one of your competitors, who has fulfilled his or her contrachad someone in the office who tual obligation.

There are a number of equip **ERIC DIXEY** ment manufacturers, including ourselves, offering simple mechanical, electrical and elec tronic solutions to the problems of providing the right informa-tion for flexible working hours i appreciate that Dr 81shops

series is as yet unfinished buts far her system does not stee cupable of providing either aurent time or presence informa tion, and even so the hardware custs would seen to be fai highs than those of most of the po-

prictary systems. In conclusion I feel the Bishou has made the come error of adopting a corrupted this company's registered tode mark "Flextime" to apply to a program which has little or no thing to do with flexible working

Henstler Flextime Ltd. Walthmn Cross.

THE ELUTER welcomes letter

enumenting on subjects published in Camputer Weekly, or on original topics. All letters must be accompanied by the vertier's name and address, not

1_REFER_tn_your_heading. "Move to make Cluff's 1DPM job full-time" (CW, July 21). Also to Computerview (CW, August 2), and the report of our unusal meeting in the same issue headed "IDIM wants 12 top firms to sponsor a full-time

time secretary-general, Ted

By the vary nature of our organisation, we always plon well ahead and decisions are made when facts are nvailable on which to base those decisions. We do not react to situations ss and when they occur, because this is the antithesis of proper planning and good minnige-

The quostion of a full-time

hours a wask - e situation snlarled job sisewhere. has o wife and two young c

Discussions have taken place on the urgent need to remed this antuation and forecasts of

Cluff with a value offered the post.

I hope you will make the der to your readers, as any other to your readers and the present cuts position with this present cuts position with this present cuts position of the control of the cuts of the

We may beat IBM to the punch on H-series—AMDAHL

ment of the H-series much further, Amdahl may force the company's hand by launching its own next generation of mainframes first.

So says Dr Gene Aindahl in the first full interview he has given since announcing his retirement as chairman last

"We are just walting for the H-series to come out. We want our opportunity to respond. And if it doesn't come out pretty soon, maybe we'll declde to bcat them to the

There are growing feelings that the H-series will be very much less of a blockbuster than originally expected, with the first two models little more respectively, offering better price-performance. Amdshl'a views seem to

reflect this bellef. "I think IBM will move things around within a system, but they will introduce as little real change as they have to IBM's principal way of fighting will have to be to get more and more complexity, and to have any changes cloaked in as much mystery as possible.

"In order to be ahead of IBM during the next generation you bave to do things in a more efficient way than IBM docs. That may sound impossible, but new invention is the kcy. Inacvation has more to offer than enormous human resources because just to do From New York, Hesh Wiener telks to Gene Amdehl, in Amdahl's first interview since ennouncing his forthcoming retirement as cheirmen.

something in a highly economical efficient manner ities analysts I really don't requires that everything be interrelated in a very small number of minds. Preferably as successful."

Amdahl's big machines are air-cooled, whereas IBM's 3033, 3032 and 370/168 are all woter-cooled. Amdahl expecta 'IBM has educated its cus-

tomers to believe that water cooling is the wave of the future, that it's better than air cooling. Clearly it is if you can't cool your machine by air! than an enhanced and a strip- But there's no technical reason ped down version of the 3033 for it. I expect IBM to continue water cooling for the foreseeable future, at least for the next decade, and probably to the end of the century."

Looking back Amdah believes the achievements and the impact of his company have been underestimated. both by customers and by stock analysts. "The customer may not

remember that prices were being raised of the time we arrived. They were raised for almost the first six months we were on the scene, it wasn't until we were n phenomenor to be taken quite seriously that prices no longer rose. It wasn't until we were taken very seriously that they drupped agnin. Until then, IBM had no

competition. As for the secur-

have the vaguest idea what kind of success would be necessary for us to be regarded For the immediate future,

Amdahl expects that the strong demand for leases will continue, and that his company's fourth quarter will bring a large number of Installations, but not very many outright

narrow impact. We see it in the stock price but not among customers, and not at the Aa for his own future,

Amdahl rejects the idea of teaching, saying he is not the professorial type.
"I intend to be working on

future generations of computers and I'll continue doing that for the rest of my life. 'I intend to work in support of Amdahl Corp's response to

the H, and anything which might precede it. Other than the direct things I do for the company, the other things I do will be independent."



perts depertments of Ferd meter daslers all over the country new that the huge Ferd Parts Centre at Daventry has been equipped with a Mascote veice respense system from Manzies Communications

She is eeen here recording the 129 different respenses that prompt the design who keys in parts orders using a terminal with an inbuilt loudepeaker. Called DDE9, Direct Order Entry

inked enline to the black mult please of an IBM 370/159. The roceeing moniter, end Ford hee written applications progrems in Cobet to handle stock database The DEC processer controls the

penses from e magnetic audio disc-it can also collect orders et night in

'Design of workplace key to ending VDU strain'

installation factors of VDUs positioning of the screen, keysuch as layout, character size, and ambient lighting, as the surrounding light — are all opposed to inherent dangers to properly controlled eyesight, is emphasised in what mises to be a definitive report on VDU workplaces, just detail, devoting chapters to the published by IFRA, the International Research Association for

The authors are Ahmet Cakir, lighting technologist from the echnical University of Berlin, David Hart, research director of IFRA, and Tom Stewart, an ergonomist currently with Builer Cox and Partners.

Newspaper Technology.

They believe that VDUs should not cause eye strain or fatigue if all the factors - such as tadiation levels from the

The 321 page report goes into

all these issues in exhaustive

technology of VDUs, the physics and physiology of vision, ergonomic requirements for VDUs and for their workplaces, and health and safety matters. A few pages are devoted to psychological issues such as mental workload, job satisfac.

control, time pressure and the need for rest. The report emphasises the need to consider all these latter factors but comes up with few

THE Importance of design and screen, character construction, surprises in the form of new D-6100, Darmstadt, West Ger ways of dealing with them. Detalled checklists are provided for analysing oil the fuc-

iors involved in purchasing VDUs and seiting up workplaces. Diagrams of recommended layouts are provided. together with examples of bad arrangements that are com-Although oimed at newspaper

applications, the report is chreful to keep its recommenda tions general enough fur ony computer installation. tion, alienation and machine

The report entitled "The VDT manual," costs 40 Dentschmarks (about £10) plus pos tage and is ovaliable from: D. J. Hart, Incn-Fiej Research Association, Washingtonplaz I,

entitled "CRT graphics ter

minuts and systems markets 11178-1983" has been published hy Venture Development Corp of Wellesley, Massachusetts, which predicts that this market will grow from \$275 million in 1978 to \$1.1 billion in 1983. VDC emphasises the growing

importance of the fact that VDU users are no longer computer professionals in the main, that designers, drultsmen, techni clans, artists and managers are increasingly using screens, and increasingly are the people who choose what equipment to buy A wide range of new markets

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Cluff and the IDPM

secretury-general The Institute is, of course, appreciative of the interest taken by Computer Weekly and your coverage. Nevertheless, which obviously cannot cosome wrong impressions have been given which are to the disadvantage of our existing part-

secretary-general has been under constant review, and we are very conscious of the advantages this will bring. But, until the administration is fully staffed and trained to deal with subscriptions, examinations,. communications with members etc. we would have our priorities wrong in appointing a full-time.

secretary-general while we had the part-time services of Ted

Unfortunately, due to the success which you have so generously reported, the conmitment hy Ted Cluff to 20 hours each week when the institute opened its offices just one year ago has not been enough

The demands of the job have furced him to extend this to all the stand this to all the stand the tinue since he has a full-time ren who deserve to see him

our income growth will be be-fore council when it meets on September 4. I must emphasis therefore, that no formal ded slon has been taken to appo full-time secretary benefal at naturally therefore, no discussional and the secretary benefal at slohs have taken place with its Cluff with a viaw to him belos offered the man

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THERE are certain specialist But the rest is pure gold. Once topics on which everyone feels. OCR equipment of reasonable entitled to expresss confident accuracy and cost becomes opinions. Economics is auch a generally available I can even field. Another Aunt Sally for see a hobby boom among home Everyman is the craft of spotting computer enthusiasts.

In days of yore, linguistic and ments is not solely of importliterary pundits did what they ance in the study of literature. could with noked eye and Intel- To the historian and the lawyer, lect. But embarrassing episodes questions of forgery also loom have repeatedly called this large method into question. An imita - A dramatic case has recently tion of Cleland, author of the. been resolved by S. Michaelson, 18th century pornographic mas- A. Q. Morton and M. Hamilton. templece Fanny Hill, was slated in the early 1950s one of the by the literary critics of The candidatos proposed by the Times and Guardian as totally Swedish Church for governunconvincing. The author mental appointment to a Bishoreplied that his text contained pric was assailed in a stream of substantial passages lifted defanoatory anonymous letters. directly from Cleland, a fact. As a result, this candidate wos which the critics had failed to struck off the list. The successful

statistical analysis of the tim of having written the letters vocabulary and structural fee- to promote his own chances of tures of disputed text, and it has appointment. Helander was breathed much-needed fresh air necurdingly unfrocked. into the dusty domains of scho-

Much excellent work was of linguistic experts. Two said on earlier done by hami, antably by Stylistic grounds that Helunder C.'W. Woke, But the Rev A. Q. was the author, and three said Morton's new book! (CW nn. Of the latter three, noc August 9) calls the roll on onined that the letters were of achievements of a new ora. The authur reviews computer-based work nn classical texts (notably Plato), biblical writings (St. Paul and the Evongelists), and some other authors. It also provides a handhook of potted methodology for the heginner, with Helander's own writings. Anauseful data on the kinds of words, combinations of words, frequencies of word-pairs, and and positions of words in sen- on the use of certain words to lences, which tend to carry the start and finish sentences. The

The authenticity of docu-

candidate, Helander, was then "Computer stylometry" is the accused by the poison-pen vic-

> Helnnder Immédiately uppealed to a five-man tribunid was the author, and three said multiple authorship. The appeni was disallowed and there the matter rested.

lo 1977 Professor Sidney Michaelson and co-workers began a computer analysis of the letters ingether with samples of lysis was primarily hosed on sintistical evidence was over-Some of the statistical exposi- whelming that Helooder was tions would be hetter sought not the author. Further it befrom standard elementary texts. came clear that authorship was

indeed nu Itiple.

Tragically, while these findings were still in preparation for publication, Helander was last year killed in a road accident. Shortly before his death he had received the news of the Edinburgh results. So he died in the expectation that he would be publicly vindicated.

Vindication does not always follow from overwhelming proof. A letter supposedly by St Paul was found by the early Christian church to be extremely useful in combating the influence of the Gnostic sect. The forger confessed, but some sections of the church continued to treat the letter as authentic in defiaoce of universal knowledge that Gnosticism anyway prose ofter Paul's death. Hence an anti-Gnostic broadside could hardly have been written by

As a university student of classical literature influenced by war-time experience of electronic text-processing, I myself attempted a punch-card analysis of certain metricul features of the Latin poet Virgil, Lucking the funds to huy edge-punched enrds, I discovered that I also lacked the physical strength needed to hand-oparate my masslve and unresponsive homemade nunch. In the era inklated by Wake, and now opened wider hy computer methods, my youthful dream may only be fulfilled! Professor Michaelson tells.

ine that next year he expects to start on Virgilian texts. By bringing some of the hinrred landscape of the humanities into focua for those who wish to see it ploio, Mortoo unil his culloborators are doing a service of

outstanding importance. 1

Donald Telie

Literary datection: how to prove suthereing and freud in literature and documents. A. Q. Morton. 221pp, £10.50. Bowkar Publishing Co. Ep-

ping, Essex, 1979, 2. S. Micheelson, A. Q. Morton and M. Hamilton, Justice for Halander: Internal Report CS-R-42-79, University of Edinburgh, Department of Computer Science, 1970.

lines adds up to 38.

Numbers 1 and 18 have been inserted to give you a start. See page 37 for solution.

SOFTWARE FILE

End-user system for small machines

Small Business Systems first

Though it will also supply the

houses and it Is looking in the

been opened by the develops released the software last Sepment of a portable information tember and it is corrently in use manogement system by a New at around 60 sites system directly, its main cus-

Called Simile, the system includes o high level non-tomers are CEMs and system procedurul language, database manogement, us well as query and reporting facilities. It is seen Ities as Nomad or Mark IV on moinframes.

well and Hewlett-Packard

34 is planned by the end of the

and looks to the operatiog system like a sulte of application programs. It uses standard operating system facilities for such thlogs as security and file On top of these, it ndds its own

logic for tasks such as data entry and database management. Databases are organised as flat files with multiple indices which can he built up into quite complex hierarchical or relational

characteristics of the system are in which it is running.

TWO products opening up new nossibilities for IBM Cl /l users one program to undertite several suris in succession which with the standard inteface is difficult, with extragel files generally needed; or laps sible when sorting from the intun file to several output file

The company expects to

apparent a UK agent or distribu-

tor in the first quarter of nen

year and is likely to sell the

software at much the same price

es in the US, viz \$6,500 to the

end user.

panies wanting to run the application in-house. APL'Plus, togethe

A new nade has been established by STSC in Düsselderf. We

Gamany, permitting users to access the service of local call charge.

More processing options

available for PL/I users

Customars in Dusseldarf previously gained access visTymnet.

with the application, will run an ony 18M 370 machina or competi

The sort/merge package. PLISort, replaces the standard Business Simulations Fd IBM sort/mergy interface with Repeat Generator Is said tods Intilities superior to those ste Ausi Culmi Report Write. two new PL/I verbs SORT and MERGE - that are trans provides a number of new Pl4 : Latements, Implemented elle In addition to extending the via 14./1 compile-time facility or, when these are not available via a separate preprocessor.

Among the generator conmands LIENERATE and TERMINATE rogether with HEADING.

Do you really know why you want to change your job?

NOTES

job which I enjoyed.

growing, and largely intangitue,

"I was working as

programmer for a car-life

company. The Job was strady

and well puld, there was a well-

ous henefits, and good working

conditions. In fact, t had a good

"Doubtlog that I was indeed

the more down-to-earth ails

which called for people with

about the same experience I

"And I went for a lot of loter-views. And I was offered a fair.

intention of changing jobs, the recrultment advertisements present a weekly challenge, appartuoliles beyond the

"Travel to America ...", "Move lote mnongement ...", "Are you conable of more ..."
"£10,000 for the best people . . ." are famillar coticemonts.

The prospect of such glitteriog prizas is stimulating. And If one's present rewards appaor by comparison loadequate, or if one's job has bacome a chore, the opportuoities offered may be

my getting a jub like that. However, wheo I finally decided lt's all too easy, in this situation, to lose sight of what to take the pluoge and move, it was not to those ads that I one really wants from a new joh. And once the wheals are set in motion, it may prove very difficult to stop or change the 'Megastar' they were ull looking for, I answered a lot of

An interesting account of one programmer's expedence of this problem — and its successful resolution - has been provided by Barbara Cotton, now n programmer with System Ald, the Southall-based systems and software house spaciallaing in

number of jobs, but none of the travel industry. them seemed to be the unswer. "I changed my job about 18 months ago," writes Ms Cotton. "The trouble was that I didn't really know why I wnoted to "And, like most people, I left not because I was aeduced by tha changa jobs and I consequently didn't know what I wanted from the new one. Offers came in of nice salarles, oice offices, olce glittering prizes offered in some recrultment ad, not because I nice salarles, nice offices, nice offices, nice salarles, nice offices, nice

"I was htterviewed initially a wife team who om the company. And thurling the Interview, I realised what it was that I was

titles which I could aspire in it fact, when I naked what my tilk would be, they looked at eduction behavely and said the could be and the said the said

"As the duys passed, I sermed to spend more and more time lanklog at the recrultment ails, speculating on the likelihood of whatever needed doing had

whatever needed to be took the job is not course, the job is not perfect; no job is But here so perfect; no job is But here so put loto a box with his beco put loto a box with his parameters which government can and cannot do. I am can and cannot do. I am frequently asked to do things frequently asked to do things have never done before, and is challenging and excling the that way I am constant to the way I am constant to the way I am constant.

"Tha main thing for main land, is the way I am consider larmlog, constantly, stretched larmlog, constantly larmlog, system all learned everything, system all learned everything, system all learned everything system in the recruitment adisegal in the will, not be to the way, out and that I will reply, it will be to the unother job with the semi foods of stimulation. After the semi foods of stimulation: After the semi foods of stimulation: After the foods of stimulation: After the semi foods of stimulation and payers.

Apple II, ITT 2020 packs

salas, purchase, and nominal ledger, all the applications ruo on 32K byte systems with one or more disc drives.

PROGRAMMER productivity at Johnson and Johnson, the medical products manufacturer, is now being evaluated using a Raytheon PTS 100 terminal system supplied by Data Logic. The PTS 100 has four screens and a controller and is lioked in IBM 3270 emulation mode to an IBM 370/125 which runs CICS and IBM's Libol online librarian package for the evaluations.

ASI has added a vidao-assisted course in logical database design to its Advanced Information Technology Curriculum. The course. "Data Base: constructing a logical design," is a companion to the five-niodule series: "Data Base: deriving logical

CADIZ, the entry-level TP monitor launched by Zeus-Hermes last yeor (Software File, February 23, 1978) has been ordered by confectionery manufacturer George Payne & Co for use on an ICL 2903.

A TURNKEY system for quantity surveyors, at a starting price of £17,500, has been produced by Computer Design Systems, of Manchester and Curdiff. 10 addition to generating hills of quantities, the system can handle accounts and payrull processing.

THE French software house Sligos-CPP has released a new performance monitor called Optas designed for the IBM DOS/VS anvironment. Amnug standard outputs are CPU utilisation per Instruction or group of instructions; file 1/O wait times; and in-phase lunding

THE Digital Equipment version of the Statistical Puckage for the Social Sciences developed by Pittsburgh University, SPCC-10, has been installed on the interoalional Rapidata network.

THE NAG group has received Ita 200th order for GLIM-3, the latest version of the Generalised Linaar Intaractive Modelling package from Walkato University in New Zealand.

End-user tools vital File management AFULL set of business packages for the Apple II or ITT 2020 has been launched by accountlog specialists Computed Systems. Including payroll, stock control, including payroll, stock control, acceptage, and nominal controls and nominal contro

gramming tools on small husiness systems has been dramatically highlighted in a new report* from Input Europe. Without them, it argues, the demand for user support will. within a few years, exceed the capacity of suppliers to provide it, presenting an obstacle to the

growth of the market. "At the rate of growth of small system shipments (which in Europe vanes between 25%-40% according to country) demand will exceed support before the end of the 80s," the report says.

"There is thus an urgent need to review the means ovailable for encouraging and enabling the user to help himself."

The report notes that minicomputer manufacturers have already reached the limit of the support they can provide. However, "thanks to the third party aupport available from systems and software houses the upper limit of shipments possible is still five to six years awav.

In the case of small business systems, where suppliers in general rely less on third parties, field support staff are currently available in sufficient numbers. However, rough calculations show that the limit will be reached in 1984.

For "office computer" vendors - such as Nixdorf, Kienzle and Philips - the equivalent point will be reached in 1982.

Arguing from these figures, the report finds that slopple user programming tools appear to be potential of languages deveoped for specific verticallyoriented murkets - "problemoriented syntax".

But it notes that there is also an Important role for the "black hox" application system. "Dedlcated, fixed application systems look very attractive and offer the best approach/solution to the need for narrowly targeted systems which require little aupport."

In another section, the report focuses un the problems foced by system suppliers to providing application software, singling out the cost of maintennoce as the major uokoown,

"Vendors' personal convictlona - rather than actual monitored dato - suggest that product malotenance creatas ovar one quarter of the total cost

"Thus, if revenue is to bolance cost in all areas of an application, then maintenance ahould represent 25%-30% of total opplications revenue and charges to end-users should be djusted accordingly."

However, Input Europe con-

trasts these estimates with the findings of its own user aurvey in the US, which looked at software costs incurred for business application systems over a useful life of five years or more. Results from this study indl-

> total ownership costs. "This suggests either that vendors' estimates are optimis-

* Application software development for mini and small bustness comcated that maintenanca on average accounted for 67% of

design methods they have not

"As with hardware products. the cost of maintenance is a fundsmentsl issue. Few manufacturers would argue with the conclusion that, as the maintenance coats of a product exceed its maintenance revenue. it should be replaced as soon as possible - and dropped from the

catalogue.
"Without knowledge of this cost for each application, how can logical decisions be made?"

putera, pp 128, £1,250. Input Europe BV, Empire House, 414 Chiswick High Road, London, W4, Tel. 01-995 5397.

A FILE management system de-signed for use with the RPS operating system on ISM's Series 1 has been developed by the New passed on to their users. York software house Date Struc-tures Inc. Called RMS, it is in-tended as an integrated technique

> RMS supports user programs in Cobol, Assembler, Fartran and PL/L RMS commands embs dded in programs are translated by pre-processor into calls to the RMS run-time system, which operates

The package elso allows RMS commends to be executed directly, giving programmers the ability to brawsa thraugh files online and modify them of will.

Random organisation is smong the number of file organisations supported and, in all file types,

can be expended or cantracted during updating. File space is allocated dynamically.

The coftware also supports multi-volume files end multipla indices per file. in the interest of efficiency, far data starage, retrieval and

RMS retains frequently-used date in memory and cherce a single buffer pool for all system needs. At the user level, it provides At the user level, it provides record-level locking to protect a fills egsinat almulteneous updating when it is being accessed concurrently by mui-

The package in addition helps in the erea of integrity and recovery, regarding file changes as temporary until a euccs seful update is confirmed.

tiple users.

Licence price for RMS in the US is \$7,800 with significant

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• 30 Amp. 69 power supply, 5 Amps on ± 159 rails fall rails are significant than the second

Cularantood consisten at 4MHz

The DPS1 comes as a mainframe with front panel, Methodocald, power supply until 4MHz 280A cpu board. The system is itsuly mortular offowing the riser to huntil up the system to required in his own time. 5100 boards from a number of manufacturers will plug into the DPS1 IEEE S10. bus. Just A-51 \$100 Memory Boards — \$100 Jisk controlled boards — \$100 TiQ busids — \$100 Video antitol graphics boards — \$100 EPROJA boards All tinaca introlsystems OEM products including 3-2 distrolleding system and PASCALIZ on 8" lioppy drives will run in the DPS 1

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NINETEEN diaca can be arranged hexagonally to give alx lines-of-three, aix lines-of-four and three lines-of-five, as shown here. This week's problem is to oumber the discs from 1 to 19, to auch a way that each of the 15

Available for in-house use by its developer, Smull Bushness Machines, as giving small sys-SCIENTIFIC Time Sharing Carp, which apprates the APL Plus the tem users much the same facilsharing service, has ennaunced that its manufacturing control system CMCS will be evaluable for purchase along with APL'Plus for con-

The software was originally implemented for the DEC LSI-11. It is now supported on the whole range of DEC equipment and on Data General, Honey-

machines. A version for the IBM System

Because it depemls on the operating system, some of the

determined by the environment For exomple, under RT/11 Simile is basically a single-user system. On larger Data General systems, it can support several simultaocous users who can tion and field length.

processing nutions, the package simplifies the program interface by allowing the sort specificatiao to be expressed in PLA terms, For example, soit keys are given as field names rather that as starting character post

have been released by Business .

Simulations Ltd, of Speldhurst,

Kent, One is an internal sort/

merge facility, the other a 1974

report geografur.

lated by a preprocessor

PROGRAMMER System Ahl by the husband and

"I needed to learn; to progress myself and to lake my carer a stop, ahend. Nobody laked ahant promution, or offered as ilefined promutional path, gener-

> "They were aqually bind nbout the joh description morely telling ma that I work jolo the team and work and to expected to muscle is and to expected to muscle is and to the control of the land.

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Fri 19th Oct

OP SPOT

Many installetions fall to recognise, and therefore waste the vast wealth of experience that exists within the operations fraternity. In this erticle CARRY

JOHNSON, operations manager at Univec in West London, shows how the operator's role cen be broedened to ben-

Set your sights higher to achieve career progress

department's accountabilities was not discussed (apart from go? How can increased responsibilities he implemented to provide meaningful challenges instrumental in an operator's career progression? How much can an operations manager commit himself to while remaining fully confident his department will meet deadlines and achieve set gonls? Why ask the questions at all of "just an operations

Over five years ago questions such as these probably were not asked, Computer operating and the operators were probably regarded as the dogsbodies of the computer industry. As long as they were paid they would stay with a particular firm, and if salary was more attractive elsewhere they would move elsewhere, the general con-sensus being that if you've operated one manufacturer's system you can operate all of his

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proposition to trained programmer - wow!) as operations was unchanged code. not regarded as a career. It was the back-dunr entry to the computer industry.

However, operating should allow for the fact that there are a large number of very intelligent, skilted people who enjoy computer operating but do not enjoy mundane, horing tasks.

There are a large number of areas within which an operations group can play an important, relevant part but may not he given the opportunity in do so.

They should be involved in the testing of new software.

How many times has a new software release been given to console, powering aff a disc the operations group to initialise the system, only for it to be found that after a few hours or days the software hus bugs and has to be rejected? Naturally

newly integrated code with not too much emphasis on related,

It is also fairly common for software people to be offered overnight test time, and consequently what precious little prime shift test time is used is usually deemed enough, Have the operations group involved, and provided they are passing enough menningful feedback to the software people on any errors encountered, you should find that test time can be scheduled at any time during shift cover and a reasonable rapport will exist between snftware and

Tests I have seen suggested and run by operations include hitting the wrong keys on the drive during access, putting up ninguetic tapes with the oxide scraped off, taking controllers offline during use. All tests within the boundaries of the software operation, but with the

human and hurdware errors for cibly introduced. 2. Flle mnintenunce should be under the control of the operatrins group, I see no reason why operators cannot be given the overall responsibility of file ollocation and security. The reasons I have heard for keeping control out of operatons is that certain users mny have requests for large file space rejected. It olso usually follows that the user group responsible for file maintenance has the largest allocation. Operations would be nble to not as un importial file implementation group and able to offer o file service throughout

3. Training should be given more

emphasis. How many firms are content with sending operators away to training courses and then suying

"Do us you've been trained", Unless o lecturer/luter/ instructor has prepared a course based on each individual's background and the firm's applications, no course can be completely relevant to all its students. Such o cross-section of operators would altend that it would be impossible. Here I refer to actual operating courses, not supervisory, administrative or

computer appreciation courses. Why not send one or two experienced operators on an "advanced" course and then give them the total responsibility for formulating and supervising the implementation of the operators' training programme? Note
— "training programme", not just training course. This would give the necessory technical expertlae tailored to each site's requirements, and additional

ior operations personnel. 4. Shift leaders should be given the freedom to administer their own shift personnel, even as far as glving periodic performance appraisals, salary reviews and hiring interviews. Naturally the manager has

responsibilities to the more sen-

overall accountability, but the shift leader is more than capable of performing such administ-



meaningless than an operator receiving a performance review from nn operations manager who has probably never seen the individual aperate and who has to assess his enpabilities, outline his future training and decide on his future career.

Operations personnel should be invited to provide input to any projects or activities which

The manager, I feel, should ask the operators what should he done if they were "in his shoes". In the event of ideos being rejected then I feel this

Let the justification he known, and this will encourage further ideas.

These are just a few areas where operators can be given extra responsibilities without just increasing the online

Five years ago operators were probably happy to have their online duties increased. New.

however, if they have been in from an operations group with operations for most of their career, they need to be shown opportunities within the group which can enhance their chances of career progression at

I connot see an operations career for all operations personnel hut I do get annoyed when operators express their long or even short term aims as lying within programming (usually as a traince!], I by no means wish po decry the software side of the computer industry thaving worked in it myself) but I wish people would stop regarding the natural next step for a senior operator as programming.

With more emphasis on each individual within the group, esnecially in the areas of hardware. knowledge, software approciation and udministrative training, the end result would be n senior operator/shift leader "over-qualified" for a trainee programmer position. I have known people move

in a position to determine the strengths of his department (and injectully identify and work on

accountability.

its weaknesses) and be able to

executive support, operations

support, operations consult-

ancy, acceptance test specifics.

tion, engineering, applications

support, pre-sules support, and

operators: Set your sights higher

may play an important role.

little wary initially, probably due

to tack of confidence. I feel,

however, that if operators are

looking for worthwhlle careers

then they will make every effort

to accept and excel in areas of

additional responsibility and

The manager should then be

I would therefore suggest to

operations management.

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Of course, the above is only an outline-there is much more to AOARAS-M

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R. L. Jenkinson Adabas Software Ltd. Laurie House 22 Colyear Street Derby, DET ILA Tel: 0332 372535 Adabas Software Limited software ag Please send me ninre information []. Please send me details of your semipars Please phone to arrange n free presentation NAME POSITION

Peripherals exhibition Top names on show The following companies are exhibiting, or have products on show, at PACE:— Set fair for September ADDS Lyne Peripherals Lyne Peripherals Lyne Peripherals Lyne Anadax Megatek Megatek

opens its doors on 11th September on what exhibiting at PACE under neighbour, Wilkes Computpromises to be the best display of peripheral hardware this year.

The three day exhibition at the Cunard Inter- LATEST DEVELOPMENTS national Hotel, Hammersmith is attrecting interest from a wide variety of buyers and indicates just An opportunity to see tha how much a part of modern business this equip- latest in peripheral equipment has become.

UP-TO-DATE

Getting the right peripheral hardware requires keeping NEWAT PACE davelopments, whether the decision is made by a small business or a multinational. This has been proved by the requests for PACE tickets which have come from all sectors of industry. Buyers are anxious not to miss the opportunity of comparing products and picking the

NO DISTRACTION

brains of the experts.

away from the distraction of com Data Systems will be while its West country the page.

the other aspects of the Banson Electronic will be

computer industry,

up-to-date with the latest An exhibition such as PACE provides the Ideal opportun-Ity to announce a new company or unveil new products. Among the exhibitors who

may be new to the U.K. peripheral buyers are Epson America, currently setting up in the U.K; PerScl, manufacturers of floppy disc drives and controllers, and Colombia Data Products, both being introduced through Datatype Sysicus. This could be the best Century Data, OEM supplier chance this year to inspect of leard disc drives, was fortha latest equipment in a merly CalComp's Memory

showing thair new fast penplotters while tite "smart" plotter model 1553 will be the main feature on the by Data Design Techniques, Nicolet Instrument stand. Lear Siegler are offering a new range of VDU's and printars through G.T.S. Terminal Display Systems of Blackburn are increasing their range by four new ADDS VDU's, and Lynwood Scientific's latest contribution is the visual display system, Alpina.

Recent newcomer to the Specifiers and buyers of penperipheral scene, DRG Business Machines, is Introducing the new Beehlve family tion fee by applying for a of VDU's plus the latest Y-E complimentary ticket. Sce business-like atmosphere. Products division, and Peri- Data range of diskette drives, the coupon at the bottom of

Ing off the Dalamedia 80/1 | Calconip video terminal.

Newbury Laboratories has supplemented its VDU's with

a naw printer, and Sigma Electronics will be explaining their latest Advanced Raster Graphics Systems un Stand 31,

A naw double density floppy disk system will be exhibited and M62, the new cods conversion reader punch unit comes from Midlectron. For those looking for a digital tape transport system, SE Labs are showing their EMI 8800 Superdrive on stand

FREE TICKETS

plieral equipment can save theneselves the £5 registra-

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Nicolet Instruments Century Data

PerScl

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MEGATEK D see it to believe it stand 21

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London software shop

Lifsboat Associates, le astting up shop in London undor ite tradansme

By Martin Banks

PEOPLE AND EVENTS By Judith Morris

Prime million dollar super salesman

A SALES exocutive with Prims Computer, John Woods, hes joined the ranks of the "Super-salosmen", by becoming the first person in Primo's UK operation to win a million dollsrs' worth of orders in one month. Woods, 33, has been a sales executive for Prime for two years, and the million dollars comprises.

and the million deliars comprises four orders pisced by priveta companies in the UK during Juna of this year. His success follows that of

GEC salasmen Peter Lene, who lest year serned £102,000 by company. Lans, who described himself as "almost a worksho-



pay of GEC managing director Si Arnold Weinstock.

Honeywell appointments

KEY monagement appoint- Cheshire. Since joining Honeyments in the customer services well I4 years ago, he haa held the division of Honeywell Information Systems include Les account manager and mar-Lomex and Alex Russsil.

Lomox becomes director for the Northern region, based at Honeyweil's regional headquartera in Cheadle Hulme,

Saul sponsor

The Hendel oretorie, "Saul" which is to be parformed at the Quaen Elizabeth Hall in London on Novembar 17, is baing spon-sored by Honeywell Informe-

The cancart will be per-formed by the Richerd Hickox Singers and Orcheefra, with soloists Charles Brett, Elizabeth Lene, Martyn Hill ond Oevid

Thomas.
"Saul" was parformed by the Richard Hickox aingers at Bruges at the opening concer in the 1978 Flanders Postival.

Brien Charlton has become controller of special services for Centre-File, the computer bureau subsidiary of the National Westminster Bank group, responsibility in the UK, Eastern Formerly systems development controller, he now assumes n new position in the management structure, where he will have responsibility for services to stockhrokers, hullding societies, Dincis Club and the Society of Motor Manufacturers and Truders.

positiona of systems manager. keting manager.

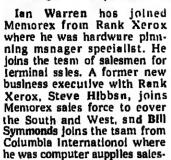
Formerly divisional systema manager of Honeywell's dota processing division, Russell has become director of product sup-

Edward Keoting has been oppointed to the board of directors of the International Micrographic Congress. He is president of Datagraphix, where he has worked since 1971. The 11th annual IMC conference is to be held in Pans this year from Scptember 24-27.

Alan Dobson, previously UK icchnical support monager for Redifon Computers, has now been oppointed international services manager, responsible for international engineering operations and International and UK technical support functions. Manager of systems ensineering operations is Kelth Bankes, formerly customer services mannger. He will ussume Europe, Elre, the Middle Enst, Far Enst and India.

George Wnddington has hecome sales manager for softwhre products with Systems Designers. He previously spent five years in markeling with





Fred Trowbridge hos been appointed accountant and office manager for John Goldsmith Computer Racruitment. He was formerly chief accountant for Apple Corp, and before that was the accountant for the Roiling

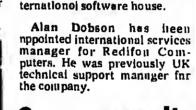
Richard Platta has been promoted from consultant to sales manager with Real Time



Manchester

A NEW Manchester-based compsny has been isunched by Norhern Software Consultants, the UK manufacturers of npplieation software. The company, NSC Computers, sims to provide o solution to management Information problems, such as accounting, order processing and stock control. This will be based on a complete computer system small enough to fit on an office desk. Marketing director of the company is Peul

Tony Ward has joined Computer Machinery Company as territory manager for the firm'a new business marketing branch. He was previously e senior



Soccer results

Tony Coombes, previously

district support manager for

Burroughs, has been appointed

manuger of new business for

Systems Resources, the Coven-

try based computer consultants.

The company specialises in IBM, ICL, DEC and Burroughs equip-

Sara Taverner has become a

consultant with John Gold-

smith, on her return from New

York, whore she has worked in

computer recrultment for twn

years for both Applied Com-

puting, and Software and Hud-

son Computer. Responsible for

recruiting temporary contract

computer personnel orc

Grahame Brownlic and Ray

homson. Brownlie was form-

erly date processing manager

with PandO (New Zealand), and

Ray Thomson was in charge o

production control with an In-

Olvison 1 Gryphon 5, Osisscene O

Olvison 2 Comshero 1, Oajasolvo City 4

Fortron use in meteorology, RCS Fortron specialist group, RCS, 13 Mansfield Street, Landon WT, 14.00,

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SEPTEMPLEH 6

The future of real time languages in process control, DCS Process Control specialist group, Reading tiniversity, Reading, 1000.

SEPTEMBER 10 Database systems and informaon retrieval UCS information group. Computer, Combridge University, Retrieval

David flyroh, who has only one arm, won a golf compatitionate filt a hole in Laboratory, Carona. The competition, an annual feature of the fate, has never been won before. Oavid is branch anginoering maneger for Oate Canoral in Bristol, and lost his left arm in a car scoldant when he was five years old.

Performance in

He is plotured here with his prize, a £4,000 Colt car with the registration plate HOLE IN 1. Devid put his success down to luck, saying, "I've only played golf three times in the last two years."

Performance management. IDPM Wost London and Oxford branch. Tesdoto Huusa, Hat field Road, Sloveh 1830.

SEPTEMBER 12-14

Shape recognition and artificial intelligence, AFTEC and IRIA. Tou-SEPTEMBER 13

Optimal control of large scolo systems. IEE. Savoy Placa, London WC2. 09.45,

Associates. The Groavanor House Hotel, Park Lanc, London. SEPTEMBER 17-91 Computer aclence and law. Course. CREST and SRC. Swanses University, Swanses. Tel: 0792 25878

SEPTEMBER 25 Aspects of a computer controlled digital telephone oxchange — the Plassey PDX. IEETE. Granville College, Sheffield. 19.00.

SEPTEMSER 28 Introduction to microprincessors. IEETE, Lelsure Cantre, Stavenage.



munnger of mansgement tyltems and services for Heitz Enrope, where he will be responsible for expansion of Heriz computer operations in the UK and Enrope. He will be based at the company headquarters le Islewarth. Kingsbury joins Hertz from Logica, where he was principal consultant in the finance division.

Michoel Harper has become marketing manager for OPM Equipment Leasing Services UK, the British affiliate of OPM Inc. the US computer leosing company. Before joint the company, Harper was direc-tor of Computer Capital, a computer brokerage firm in the UK.

Liveware File



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Guy Kingsbury has become

certainly being committed to microelectronics production technology. A recent Issue of the Jena Review, an Englishlanguage publication from Ithaca enters Europe

MICRO NEWS

ol a Control Data report on

Russlan mlerocircuit develop-

ments (CW, April 5), compleil

with speculation that some of

the design work for these chips

had been carried out in East

Germany, suggests that the East

Gemans are planning a major thrust in the technology.

Decrees passed by the sixth

meeting of the Central Commit-

tee of the Socialist Unity Party

ol Germany demonstrated the

importance placed by the Eust

German government on

microelectronics technology and its application, and indi-

cated the need for the govern-

ment to protect its microelec-

It now seems probable that

considerable funda are being

committed to developments in

microelectronics by the East

Germans, though since the en-

difficult to isolate nn amount.

the industry is State-owned, it is

Some of this money is almost

tronics industry.

and for a price of £695 Incomorates o Z80 microprocessor, power supply, case, hardware frunt panel and a 20-slot

boards that are avallable.

The Pasent compiler is derather than UCSD P-code. This re-entrant, and can be put hijo Rt)M If required, it needs a 56Kbyte Z80-based system to rito. and can be supplied in either CP/M or K2 operating system

development are intended for something new from Robotron, an equivalent system to the new IBM 4300 range of computers.

mieron range, and therefore well into the VLSI category. Industry sources are now speculating on what uses the East Germons will put this production capability to, bearing in inlind that there is little in the way of a "consumer" market for microelectronle products in the

East Germany prepares

major thrust into chips

It would appear that the major development effort is to be found in bipolar devices, particulnrly ECL, rather than in MOS products. Here, two main product groups are being suggested.

capable of producing circuits

with geometries well inside the 3

Tha first is low-end 4-blt microcontrollers almed specifically at applications in the ndustnal control market.

The second is much more ndvanced, and considerably more Interesting. This is fast and complex bit-slice devices intended for large computer sys-

The East German computer company, Robotron, ulready has n mainframe equivalent to IBM's 370/148. This is known as the optics manufacturer Carl Zeiss ES-1055 (CW, March 16). It is

Jena, carries several articles on now being suggested that the

ONE'of Newbenr Computing IEEE, S-100 bus droft standard, Store's main US computer supplers, Ithacu Audio, has set up a European marketing and techakal support operation in Landon, and has changed its name toliliaca intersystems.
Establishing Itself at 58

Crouch Hall Road, London NS, thata has timed the opening of its European office to coincide with the announcement of n new range of \$100-based products. These include a new microconiputer system, called the DPS-1, an analogue input/output board, a two-serini, four-parallel port I/D board, n high density

memory expansion units, and a The DPS-1 is built to the new versiona.

graphics board, two new

Apart from the Z80 card, all the other slots are vacant, thus nllowing users to configure specific systems from the wide range of S-100-compatible

signed for Z80-based systems, producing Z80 macro code As a result of this process, the required masks to produce those layers con be generated.

The second is that some of the

The second is that some of the leading Western manufacturera small business system Though the East Germans' efforts seemed directed towards ECL technology, any developare turning a blind eye to mask sets of circuits "going AWOL." ments in microelectronica appliestions means the increasing The theory behind this idea is that support and investment for use of memory devices - and new designs, especially from the military, will be easier to obtain that means MOS. As the Control Data report if it can be shown that Eastern showed, the Eastern bloc coun-

bloc countries are up with eurtries are capable of producing well-engineered MOS memory rent technology.
It is interesting to note that parts, even If the designs are virtually direct copies of US delate last year, the US Defence Department announced a \$200 millon development pro-gramme for Very HIgh Speed Integmilon, VHSI, devices that This has led to further specu-

lation as to where the Eastern bloe countries obtain detoils of would be 100 times faster than The first possibility ia "reverse

current circuits (CW, November engineering" where a manufac- 30, 1978).

The Software Suparmerket. At 32 Neal Streat, London, WC2, the company will be bringing to this course a extensive range of software products running under the popular CP/M operating system. These ero suitable for most makes of derocomputer system. In addition, Lifebost will be offsring products spacifically writte for, or tallored for, the UK mnrket. **Rothwell introduces**

ANOTHER entrant in the race to capture the small bustness computer market has been in-troduced into the UK by Rothwell Dath Systems of Aldershot.

This one is the Billings Microsystem, manufactured by the illings Computer Corp of Provo, Utah, US.

The Z80-based system costing about £4,500 is an integral deaktop unit incorporating a total of 64K bytes of RAM, dual mini floppy disc drives offering 300K bytes, 12-inch viden display and keyboards: qwerty. t hree numeric, and dedicated function.

Two RS232C sertal ports and an 8-bit parallel printer port are also provided as standard. An alternative configuration

of the system provides a total of Mhytes of secondory storage by using an external dual floppy A number of applications

software packages are already available for the Microsystem. which can run Fortran, Cobol and extended Basic high-level inuguages. The system utilities available include a text editor, assembler, overlay linker, and user library routines.

Now more room than ever, In the GRAND HALL, OLYMPIA, LONDON November 6, 7 and 8,1979 Most of last year's exhibitors have already spoken for space, but the move to the Grand Hall makes more stands available. For details, pool the conjunitionary - or phone 01-261 8437/8 To the Estimation Manager COMPEC'79 Room h21 Dolpol toquee | Standard Street Landon SEt 9LU Ploase percel us mas prospertive extributors and send a free bure to the undersigned ompec is agongored by "Computer Westly". Data Processes nd Systems International", the leading UK computer

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Marconi award

Allan Butcher hos joined
General Computer Systems
(UK) as territory manager for North London, Northern Home Countles and East Angila. Ted Vivian has also been appointed to head Datatext sales in South London and the South and West of England. Both were prevlously saleamen with Rank

ONLOOKERS at Stemmore Cricket Club's annual fate ware amazed when

ductors Europe to heed a erly CMOS operations manager project manager for Apple in Austin, Doug Dunn, who Computer's professional sys- continusa as head of the company's NMOS operations in

personnel manager for Scicon personnel manager for Scicon
Consultoncy International. He ISM CUA and Sutice Cox was previously senior personnel officer for British Airwoys. Wolf Losscher has been

position was that of manager of Europe has been appointed database software for Hewistt-assistant general manager at Packard's 3000 computer series, East Kilbride.

ien Townsand has become SEPTEMBER 17

named by Motorolo Scmlconrecently expanded MOS facility in Scotland. Loescher was formCOURSES

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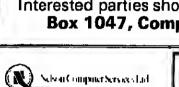
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Angebotsabgabe:
Die Angebote sind bis Dienstag, 25. September 1979, 8.45 Uhr, in versehlossenen Umschlägen mit der Aufschrift "Angebot Ober Softwareprodukte Informationssystem AKH, der Firma

Öffentliche Angebotseröffnung:
Dienstag, 25. September 1979, 9.00 Uhr, Sitzungszimmer, AKPE,
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12 Wochen.

Die Ausschreibungsunterlagen sind ab Montag, 13. August 1979 gegen Einzahlung von öS 5.000.- bei der ÄKPE, 1090 Wien, Lazarettsasse Zi, Erugeschot, Zimmer E 05. werktags tunder Samstags von 4.00 bis 12.00 Uhr ethilitlich. In dieser Zeit kann bei der Arbeitsgemeinschaft Betriebsonganisation, 1160 Wien, Neulechenfelder Straße I2, Dr. Böhm, Telefon: 43 59 94 nach telefonischer Anmeldung in Unterlagen und Pläne Einsicht genommen werden.*)

Angebote von Firmen können nur dann berücksichtigt werden, wenn die Bieter elle in Österreich nolwendigen Berechtigungen und nachweisbaf den nötigen Botriebsumfang und die entsprechende Erfahrung bestizen.

*1 Die Ausschreibungsunterlagen werden jedoch Interessenten aus dem Austand auch gegen vorherige Einzelnlung von 65 5.000, auf das Konlobei der Zentralsparkasse der Gemeinde Wien 696-025-303 unverzüglich nach Einlangen des vorerwijhnten Betrages zugesundt.



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INTRODUCTION TO PASCAL Getting full use from parameters

There are three remaining features of Pascal to discuss: parameters, input-output and the GOTO atatement.

Protection again

Throughout this series, the ways in which Pascal guards against silly mistakes have been emphasised. Some of these features are symbolic constants, records, subranges and symbolic values. A fourth facility, which is strangely not present in many common languages today, is the value porameter. When a volue parameter is passed to a procedure, the procedure makes a local copy of it. It is then free to use the local copy just like a local variable. The protection comes in with the realisation that the original variable cannot and will not ba altered in any way. There ls also another advantage; the user need not make his own local copies before using the value, which saves space and time.

When changes are nacessary

Often it is vital that a procedure does after the value of some of its porameters. The classic case is in reading in. For example, in Part 6, we declared

PROCEDURE rendtime (VAR thistime : time):

which rend offme and put it into the actual variable passed as the parameter. Thistime is prefixed with the word VAR, indicating that the parameter was passed "by reference" and hence any changes made will vary the original. The counterpart of readtime

PROCEDURE writetime (thistime : time);

which obviously does not alter the porumeter which is, by defnult,

'Unusuai paramaters

The third kind of purameter available in Pascni is the procedure or function. Most programmera, and even teachers of programming, are hard put to find a use for this feature, other than in numerical analysis. I have alwaya found the following little procedure to be most useful lit arranging output neatly.

PROCEDURE formatiline (line : string; length : stringrange; PROCEDURE method);

The various methods that can be supplied arc centre, rightjustify, left justify or asis. These are all procedures which will arrange the necessary tabhing. Formatline can be called by

formotilne (heading, 40, centre); formatiine (subheading, 12, leftjuatify); formotilne ('PAGE 8', 6, rightjustify);

In Port 5, the use of read and readin was discussed and all along, the flag cof has been used as a means of detecting the end of a file. There is also nnother fing called colu which will detect whether

the end of a line has been reached. This is often useful and sometimes necessary. In Pocal, a file that consists of characters is called a text file and it may be divided into lines. The lines may vary in length and are aeparated by line markets which monifes hemselves aa apoces, Let

EFGHIJ\$
KLMNOPQRST\$

be lines of a file, where \$ ia the line marker. If we want to copy

read(ch); write(ch) UNTIL eof:

ABCD EFGHIJ KLMNOPQRST

because the line markers appear as spaces. Therefore after each write there must be a query

IF eoin THEN readin

Output

to get rid of It.

Conresponding to read and readin there are write and writeln. Their action depends on the type of the file and on the type of the liems. A write to a storage file such as Weekly file or Statistics is like the unformatted write in Fortran and the PUT in PL/I. If the file is declared as text (or FILE OF char) then all items are converted to characters first, as in PL/I's PUT EDIT. A nice feature of this is that each item is written in a sensible number of ns outomatically, such as

> characters l eolumn integers 10 columns Tá caluntus

This can be varied by following the Item with a field width. For example, If I la 173 then

writo (l, l:4, l:1);

----- 173 - 173 - 173

where - indicates a space. If the field width is too small, it is expanded, as in the last case. The field width can also be used in skip o number of spaces, as in the underline procedure's

write(space : Inh); At the end of a line, write in must be issued.

The harmful(?) GOTD

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Many thousands of words have been written about this four letter word and its dreadful influence on structured programming. Languages with good conditional looping facilities conder explicit jumping virtually unnecessary. Some would argue that the GOTO should be abidished altogether. Even though it does

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Hourds e tempododus. 7-8 Mill Streat. Stafford ST16-2AJ Tel: Stafford 4422] PDP LEFT RL11, RENT Land. RSTS are trade marks of Digital Equipment Corporation Assembly Vaga exhaustra

PRODUCT NOTES

Electronic embosser with mini back-up

ADDRESSOGRAPH Multigraph has launched two new systems, the Addressograph 6500 electronic embosser, and the Addressograph 6600, which is an embosser with minicomputer power. The 6500 model accommo-dates most standard card stylos, sizes and

shapes and has en output potential of 100 plates or cards per hour. There is a buffer memory of 40 characters and character drums for the 6500 can be supplied in 64 or 82 character versions, in various stendard letter and

of the \$500, the 6600 (pictured left) has a keyboard extended

with 10 special function keys, eight mode indicators and four memories, a 25g cha-

recter buffer and thrae

separate 258 character dats

atores. It has a speed poten-tiel of 200 cards per hour, and

can be equipped with a video screen to display date in

buffer and memory. The 6600 could also be connected to a

computer to act as an online terminal.

Addressograph-Multigreph Lid (CW), Maylands Avenue, Hemel Hempslead HP2 7ET. Tel: 0442 42251.

A FASTER printing speed of 1,000 Ipm, a resolution of 200 dots per inch, a darker and improved writing quality and a faster start up dme are some of the features of the Versated 1200A electrostatic printer.

1200A electrostatic printer

plotter. It provides printout and graphics output from

niust computers. Optional software adds half tones and

nn optiunal controller allows

eight displny ternthals.

hard copy production from up



The \$200 with extended keyboard.

Power supply unit

THE power to protect the contents of computer memory in case of mains full ures is provided by a buttery back-up unit from Oicell Electronics. It is designed for nse with the Olgital Equip-ment LSI-II and PDP-11/03

The unit, 314 Inches high, has two 8 volt 18 anni-hour rated batteries that are rechargesbic, maintenance free and do not leak, plus a reetliler, chorger, countral circult and relays, and DC-DC convertors. Fifteen hours of emergency power can be generated by the hack-up

The betteries are designed tu operate for five years under

recliniged when the emer-

normal conditions and the relays have an expected mechanical life of more than 10 million operations. The DC-OC convertor modules are capable of supplying up to 5 volts at 2 anges and 12 volts at I drup, and are regulated to within 5%.

Dicull Electronics Ltd (CW), Bond Close, Kingshind Falate, Basingstuke, Hamp-shire, Tel: 0256 01551.

Digital colour pictures

THE Colorwrite C-4300 is a standard Optronles product that produces a high quality. high resolution cubent film image from digital input data. The C-4300 can now be purchased with a dual light source which gives rulour mages and also high quality black and white.

The light source for colour image is a glow-center tutar, modulated in such a way that its delivery through the optic path is never completely

Fentures of the Colorwrite system include gamma cor-petion, selectable raster and aperture sizes, 32 repentable density levels per primary cobour, or to repentuble grey levels in black and white operation and convenient operation under normal lighting conditions.

Optronics International (CW), 7 Stuart Road, Chelms-ford, Massachusetts, 01824

Silenced convertor

MPL of Hayes this imposinged a silenced frequency conver-tor, which offers the Anndali user a packaged power system of 75 kilowatts for instal-lation alongside the Ameldil VDU. The power bulb produces a 441 Hz output for the CPU and can be installed in

The frequency convertor has a stored energy capability to risk through a power break for half a second and during this break it will deliver full calput to the computer. Manufacturing Processos (CW), Belvedaro Works, Bilton Way, Hoyes, Middx. Tel: 01-848 9871.

Alarm/calculator

in Casio'a scientific calculator, the FX-8000. It can measure time lapac betwoen evente during e test or it can signal or observations to be made As a stopwatch, It gives e

A STOPWATCH and plarm choice of three operating modes are possible, onca-

It costa £35.95. Caalo Elactronies (CW), 28 Scrutton Btreet, London EC2. Tel: 01-377 9087.

"AN electric wasta paper baa

Shredder

ket" la how the Variahred Discract has been desorbe It is the latest addition t Raxel'a range of paper shred dera, attarids at a deak side, k sinali and ideally suited to private office.

atarte the action and the machine swiichea Itaelf Of nftar the paper has passe through the stant cuters. I measures 380 x 200 x 250 mm and costs about £130.
Rexol (CW), Gatehouae
Road, Aylesbury, Bucks, Tels
Aylesbury 81421

RACK-BACK cassett contact with paper over long ng binders are now avail ble frem Wilson Jone distances. A toner pump de livers more toner at a high pressure to the fountain. Date Bystema Olvisien o endhurst (Btetloner which shortens start up time Thay can hold 12 cassettes n individuel plestic pockets, six in both tront to one second. Other features lucinde a new toner formulation Type S, producing a significant increase in darkand beek covers and rea latad hard copy (see ple ore above). Mede of has auge black vinyl, t Versatee (CW), 27/35 Lonovers have seamless edges to reduce fraying. shire, Tel: 0830 42421. The contents can easily be identified by label inserts evellable for the backs

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THE first 6 to 1,200 band

acoustic couplet for telephone lines and long dis-

tance direct diol systems, cal-led Huiline, has been intro-duced by modem manufac-

turer, Tek-Com. The TC3003 Hulling offers a

full set of test functions and features include 0 to 1,200

baud, asynchronoua full duplex operation, elso operating at 0 to 300 baud with Bell 1138, k is compar-

ible with all computer sys-lems and data terminals and

gives high accuracy and

stability over wide variations in temperature, data rate, line voltage and received signal amplitudes.

California, 94086, USA.

Tek-Com tnc (CW), 1147

nora Court, Sunnyvele,

Base Ten Bystems' Intelligent dete logger.

Intelligent loggers

BASE Ten Systems has intro-duced two new models as ad-ditions to its range of portabla

Intelligent data loggers.

Thay are aquipped with cathode ray tuba display end a numeric keypad to remove

complicated awitching pro-cedures often necessary with

conventional data loggera.

The two new products ar

the mDAS-OP, which I

the mDAS-QP: which is operator programmable via a promptling routina, and tha mDAS-SP, which has its own plug io keyboard so that programs can be developed in emigh level language, on the unit's internal micropromit.

play which will enable the

accuracy of graphic data

being plotted to be verified without the accd to wait for

Ferranti Cetee Graphiles (CW), Ferry Rond, Edinhurgh.

conductive mats, static charges in the body are car-ried to the floor.

The 1850 aeries of floor

mats contein a tough emboased meterial which

Data Racording Products Group (CW), 3M United Kingdom, PO Box I, Bracknell, Barks. Tel: Brac-

produce up to 99 copies at any

Ollvetti SRT 2000 sorter,

Olivetti SRT 2000 sorrer, which has 20 baskets end is able 10 automatically sort, separate end stack copies of multiple page documents.
British Olivetti Ltd (CW), 30 Barkaley Square, London Wi. Tel: 01-629 8807.

Paper can be collated by the

does not curl.

one time.

Binder

High speed output

Electrostatic plotter

FERRANTI Cetec Graphics has introduced the Model EP 340 computer planter, designed for recording large volumes of graphic or alphanumeric computer output data at high speed. Graphic data recording

fucilities include automatic line, are and circle interpoletion. Four different types of line can be recorded, each at any one of ten density levels. Dain can be recorded on 35

A PRACTICAL casel binder with a stondard four ring mechanism to take most nini or 16 min, perfornted or unperfurated roll film, or 105 types of loose leef meterisi is available from Amalgamated unperintrofelic. At the end of each page or plot the frome la advanced automaticulty. The EP 340 can be operated either Loose Leaf. Folded, the binder is an ordinary ring binder, and opened our makes e selfon the or offline. supporting ensel.
Amalganieted Amalganieted Loose Leef (CW), Wellece Roed, London. Tel: 01-359 3511.

An optional feature that can be incurporated in a Fer-rauli Cetee EP 340 microfilm pinter is a storage tube dis-

Anti-static mats

DELICATE emilphient which may be upset or damaged by static built up can now be protected by a rigid floor mat designed to drain off excessive static.

The Velostet mets, made by 3M, are aveilable in threa sizes and form a protective islend round computers end electronically controllad office equipment. As parsonal state on the electrically nal step on the electrically

Finished photocopies aldes of the paper and will

A FINISHED photocopy every two seconds is one of the many facilities aveilable with the letest copying sys-

tam from Olivetti;
The Copia 2000 is the top of the Copie range and is able to raproduca all types of originale, including manuscripts, photographs and photocopiae. It can automatically copy on both,

Graphics terminal

480 lpm thermal graphics printer

graphics printer able to print at speeds of 480 full lines per by Hewlett-Packard.

Known as Model 9878A, it contains a standard Ascii 128 character set featuring both

conirol characters. Seven additional character sels ara also available for foreign languages. Tha user fining special dot patterns which are then stored in the

Graphics can be printed I two forms, atrip chart and CRT dump Plotting speeds renge from 3.8 to 25 mm/sec The printer can ba usad with the mejority of computers, heving two common interface modea_Self-test facilities are atured in this printer which incorporates a number of sefety features to prevent damage through mlause. Hewlett-Peckard Ltd (CW),

King Stract Lane, Winnersh

Peripheral holders

A RANGE of book-format holders for magnetic cerds, floppy discs and mini-discs has been introduced by BOP (Word Processing). They are made of polypropylene to provide protection during transport and ugainst duat, debris, changes in lempere-lure and humidity. The card holders hold up to

50 cards in envelopes and up to 200 withuit, while the floppy and inini-disc holders each hold 10 discs. All the The range also includes A4 indeers with plastic sleeves designed to hold mini-discs nr cerds with relevant hard BDP (Word Processing)

for easy refarence, and the holders will accept hard copy menuscripts folded to anve-

lone **e**ize.

Tower Road, tslewnrth.

Scientific calculator A SLIMLINE scientific calcu-lator with statistical functions

and a constant inemory feo-ture has been introduced by Texas Instruments. It can Texas Instruments Ltd. (CW), European Consumer Division, Manton Lane, Bedford MK41 7PA. Tel: 0234 retain dats in its two memories, even when the culculatur is switched off.
The TI-50 has 60 algebraic

calculator functions, plus statistical operations. The calculator uses Texas Instru-ments AOS algebrate **Brochure** A BROCHURE which de scribes the Kennedy Seric operating system and the ADP automatic switch-off 5300 Whichester fixed disa drive is available from Ken

feature. It has a large 8-digit liquid crystal display, full The drive, with one, three o tive recording surfaces, has ar scientific notation and manunformatted storage capacity of up to 70 Mbytes, and uses modified-frequency modula-tion techniques with 3348 ilssa expansion capability. The AOS system includes 15 levels of parentheses and up to four pending operations. The APO feature shots the

Kennedy Company (CW) 540 West Woodbury Rood of non-use. Two years of nor-mal operation are provided on Alladena, Calitornia, USA,

alone or attached to keyboard

send receive devices, such as printers and VDUs.

Buffering combined with X on or X off protocol enables the 150 chps reader and 50

neily Company of California

Reader/punch

THE 6402 paper tape reader end punch has been an-nounced by Pericom Data its renge of micro based

computer renninals.
The 6401 paper tape station consists of a high speed tape reader end punch which cen

The cassatte unit built into the new mOAS systems also performs two important functions. First, it provides

permanant storege for variable ptogrem set up

parameters entered by the

uperator and storege of

softwire. Second, it provides

storage for dota from the life but chunnels selected for

racording and storage for reduced data and other prameters identified by the nicroprocessor for recording.

Basa Ton Systems (GW),

Unit 3, Lower Farnizot Road. Aldershot, Hants: [ai: 0252

chps punch to operate at any switch selectable baud rate from 75 to 9,600. Five to eigh level codes ere aveilable and operate remotely, either stand there are facilities for code a large degree of flexibility in the execution of control codes to facilitete simple integration into existing systems.

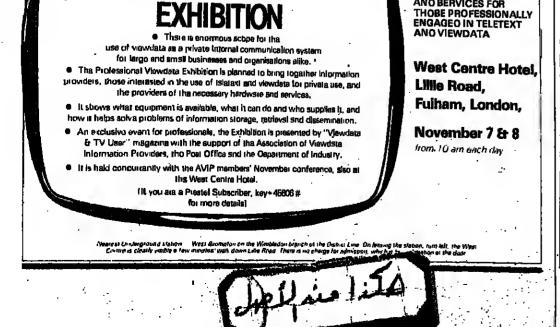
The 8401 can be used in conjunction with printer ter-minals; to provide forms length selact and vertical and horizontel tebulation facilities, ellowing dete compres

> Pericom Dete Terminate (CW), t-3 Burners Lane, Kiln Farm, Milton Keynes, Bucks Tal: Milton Keynes 564747.

UNIVERSAL product codes which are printed on niosi food packages and other pro-ducts sold in supermarkets cen be read by NCR's new hend held wand scanner.

The NCR 7877 comple ments, the current "slot seagner which is already use at checkoul stands. But these scanliors are used will the NCR 255/726 cur puterised checknut hyster end can be added to 255 ter ninuls aiready installed.

NCR (CW), Marylebone



PASCAL

LSi 11/PDP 11/VAX 11 Computer Users

Fast davalopmant tools

Writa or call for further



by Dr Judy

in the ninth of hat 10-pers

soriea, Introduction to Paacel, Dr Judy Bishop discusaea the various uses for

parametara, input/output

and the controvatalal goro

Dr Blahop la a lacturer in

computer acianca s

Witwetorarand Univarilty in South Africa and first ba-

came ecqueinted with

researching har PhD at

Southempton University.

have its uses, particularly in jumping out of the middle of a loop

on an unexpected condition or error, it is prohably preferable to

write such loops using state variables, as described in Part 7. One author has described the GOTO as being "a statement in greater

These days, increasing emphasis is being placed on standar-dising languages and thereby enhancing the portability of

programs. Because of the way they developed and proliferated, the older languages will always exist in local dialects despite all

the efforts of countless standards committees. Paacal had a beller

chance as it was forewarned of this danger and entered the world

b) A concise yet helpful user manual

The result is very few variations from implementation to

implementation. Dialects do exist, mainly because of restrictions

or extensions, rather than changes. As an example, I took 4,000

lines of programs from an ICL 1906A in the UK to an IBM 370/158

in South Africa and had one syntax error tan extension which had

n different form) and two execution errors (due to different

character sets supported by the two machines), before the

A novel ideo to aid portability is a compiler switch which when

activated flags all non-standard constructs with a warning. Thus

before exporting a program to another machine, it should be us

with the shaudard switch on and this listing sent with the

program. It is not necessary to take out every non-standard

feature because the importing machine might well support them.

In November, 1978, Tony Addynian from Manchester submit-

led the draft proposal for Standard Pascol to the British

Standards Institute for processing, to due course, this will be

available for public comment and will also be circulated to ISO

member hodies. The line taken by the document follows the

resolution made by 130 Pascal users at the Southampton Sym-

position in April 1977, that is that the original Repurt should be

accepted in essence, with certain clarifications and tightening up

of semantics. The importance of this decision is that no

implementation or text book is repriered out-of-date. Theresult is

Working in conjunction with Addynau, a group of II key implementors headed by Witth has sifted through all the

proposed extensions to the language and will publish a very short list of "conventionalised extensions" shortly. These will not be

part of Shundard Pascal, but a goide to the form in extension

should take, if It is felt to be essential. The list includes the

much requested variable bound array parameters and imple-

mentors intending to put these into their compilers should first

As a matter of interest, the composition of this II-man working

usual Nurthern Hemisphere power groups. The country with the most members was Australia — three.

NEXT WEEK: Part 10, The burning question:

group proved that Pascul Is not governed by one or other of the

check with Pascal News for details of how to do it.

that Pasent is not only standard -- it is stable.

a) A precise and short Report

c) A portable compiler kit.

need of comments" which should put most people off

Dialects and portability

programs were running smoothly.

Switch-on standards

What is the standard?

Wirth's Working Group

pnacal when aha was

Bishop

insertion of the document to be shredded automatically

THE Sigms T5800 graphics terminal is now available with a separate VDU acrolling. a separate VDU acromas aipha store. This option costs about 2380 and allows aimule anabus graphics and alpha-numeric operation under pro-gram control, greatly syriou-ding the unit sinteractive days the control of the con-position. arability. The T5600 is a high resol

turing's 768 x 513 display area, turing's 768 x 513 display area, it is designed for general pur-pose graphic applications with sophisticated drawing facilities and salective

erasure Signa Electronic Systems (CW), Church Street, War-

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snop — they specialise in whose projects arises that consumity work may.

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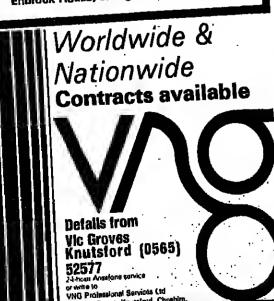
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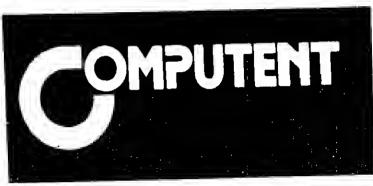
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COMPUTER WEEKLY, August 23, 1979



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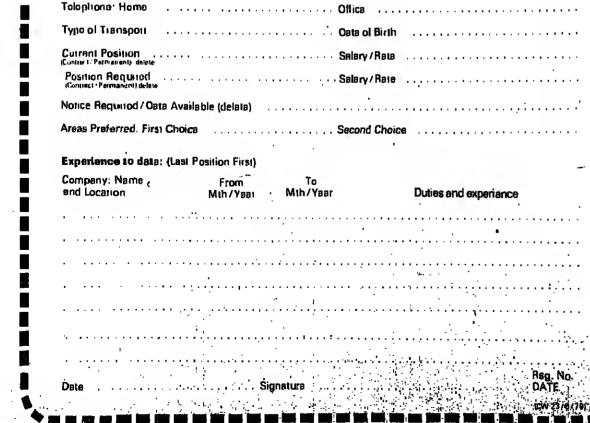
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The main value of this story for nie is the opportunity to relterate that war-ning udage "Product nioneering should be for someune else".

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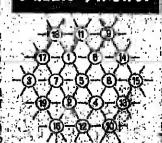
formally arranged. He then gave his prospect the good news and all was set for the There is nothing wrong with the salesmen using cision, so long as he has first investigated the product in depth to ensure its existence, relevanca, price

and availability. The salesman should clumys bear in mind that qualifying the sale applies just as much to his own company's capability as the

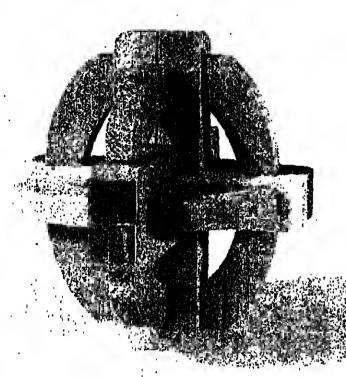
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sotisfectory company situa-tion. His attitude towards his job and his company had been profoundly corrupted, and a sense of dialiluationment and relative Insecurity had been created. If I give you an outline of

the story, you will have a man'a feeling: During the course of new business pro-specting, he unearthed a seles situation where negotiations were olready in progresa. He noturally asked the client obout the requirement and soon discovered that his company did not have a product which matched the client's precise needs. (Whether these needs were, in fact. desirea implanted in the buyer's mind by a competitive salesman was be-side the point!). However, the salesman

quickly recalled that during a recent visit to head office he had been told about a forthcoming new product which would offset the happened, had a specificntion fitting exactly with the

demands of his new pro-So he explained that he hod some pre-release inforwould probably offer better competitive product, would the client like a special preview if he could fix it? The client agreed to hold back on his other negotiation and

The salesman-quickly telephoned his sales manager, who apparently

event, he was urgantly summoned to his manager's office and told that the demonstration would have to be cancelled. Temporary feult, atrikes, llinese, nolidays! What would be the revised date?

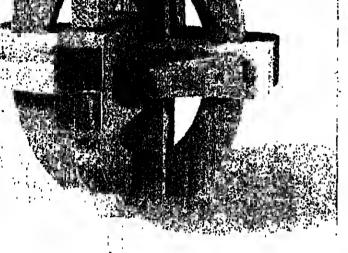
Never! There is no such product; there never was!

had to act quickly to professional credibility of So he suggested to his able tomorrow. manager that a concellation call from a more senior person then himself might be petter received by his cliant in the circumstances. The sales managar agreed and promptly made the telephone call.

imegine the ealesman's shock and dismay when the the prospect explaining that the situation was entirely due to over-enthusiasm and speculation on the part of their representative.

When this salesman wrote to me (as many do





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